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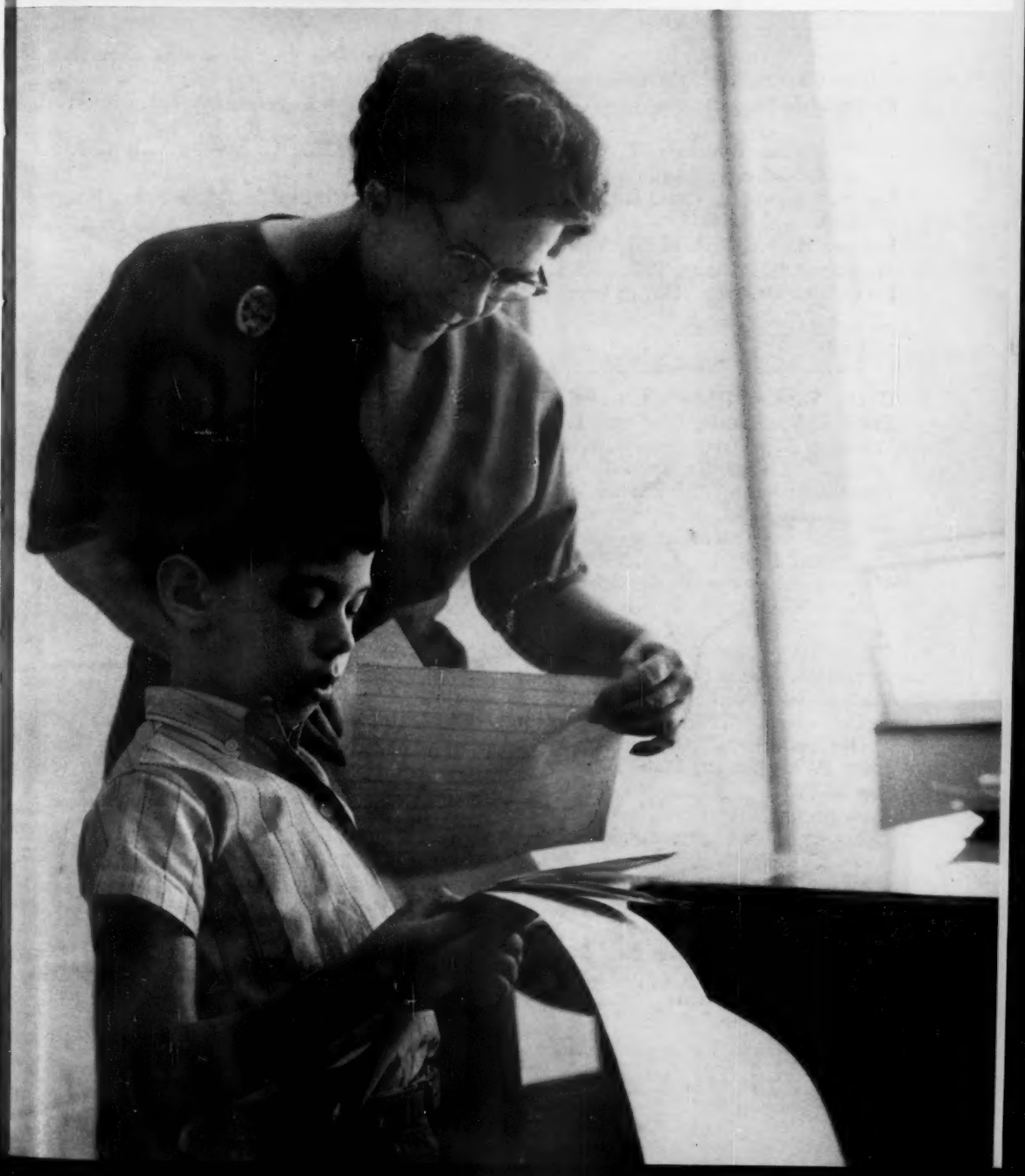

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Elementary Education: Issues and Prospects

Editorial

The New World as Challenge and Opportunity — *William Heard Kilpatrick* — 74

Articles

On the theme

Age-Graded Elementary School — *Anne Christensen* — 76
Ungraded Primary School — *Florence C. Kelly* — 79
Self-Contained Classroom: Where Do We Stand? — *Rodney Tillman* — 82
Team Teaching for the Elementary School — *Philip Lambert* — 85
The Dual Progress Plan — *Glen Heathers* — 89
Reactions to the Dual Progress Plan — *Robert S. Fleming, Beatrice Hurley, Alice V. Keliher and George Manolakes* — 92
What Is Coming in Elementary Mathematics — *Paul C. Rosenbloom* — 96

In general

Role of the Director of Instruction — *C. Glen Hass* — 101
Communicating Educational Ideas — *Ronald C. Doll* — 109

Departments

The Importance of People — *Prudence Bostwick* — 115
Curriculum Developments — *Arthur Hoppe* — 123
Significant Books — *Elizabeth Z. Howard, D. Bob Gowin, Bruce R. Joyce, John Sternig, Robert L. McCaul, Mildred Thurston* — 129

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Editorial

William Heard Kilpatrick

The New World as Challenge and Opportunity

PERHAPS the most urgent demand on the American people, and so on American education, grows out of the necessity to meet rapid changes in our world—in American life and in the wider world of which we have become so inescapably a part. Young people, reading the daily newspapers and observing the new problems which beset our country, find a world fundamentally different from any previously known. Jets reach in hours places formerly days, even weeks, away. Crucial happenings on the other side of the world affect us deeply here in the United States.

Perhaps the most significant single shift lies in the new degree of world leadership thrust upon our country by the development of world events following World War II. Whether or not we are prepared for it, this responsibility has been thrust upon us, in large part by the division of the world into highly conflicting outlooks—the free world of America and Western Europe on the one hand, and the Communist world of the USSR and Red China on the other hand. Thus whether we like it or not, increasingly rapid change is part of our world in a sense and degree hitherto unknown, and we must learn to deal with it constructively. Again whether we like it or not, we in the U. S. have the obligation to meet our responsibilities in ways befitting the Free World's largest democracy.

We have learned at the same time the fact of Interdependence. The happiness of life in the United States can be affected by happenings in Moscow and Peking, in Indonesia and Singapore, in Korea and in Japan, in the Congo and in Katanga. Within, let us say, the past two decades we have learned the sobering fact of our interdependence, that misery, hunger, substandard living in any corner of the world must be our concern, that life in the United States can be affected by events half a world away, that well-being of hungry people over the world cannot be disregarded.

It seems clear that the overarching task and challenge to the world today is to build the Good Life, a Life-Good-to-Live, for each, for all. Philosophers through the ages have speculated about the Good Life, frequently in terms which restricted it to a few. Now sober thinking concedes that a Life-Good-to-Live for *all* persons is no impossibility. Machines, things, goods, money, even education and the opportunity to develop one's potentialities are all widely available in this country and in much of Europe. Moreover, the means exist to wipe out both want and lack of opportunity. Though this has not yet come to pass, it seems clear that this is the time to plan, to use the means and insight

we have already available so as to eventually bring about this worthy end.

Such a Life-Good-to-Live will vary according to the tastes and talents of individuals. Some will stress literature, music, the arts; some will find their challenge and satisfaction in science or in history; some will study the past, others the present; some will lead lives of religious devotion; and so on.

Plainly more is involved than a merely comfortable life, though provision for needs and the reasonable comforts of life is properly to be sought. But life is more than the body and its wants and more than possession of money and things. A sounder approach is through increasing depth and expanding horizons, a quality of living which includes the thoughtful, the discerning.

Perhaps the most significant question in this country at present is whether people themselves are ready to think in terms of a truly rich life rather than a merely pleasurable one, to think of a life depending for its richness on the content put into it. How to live fruitfully and satisfyingly, in the variety of ways suited to the variety of individuals? How to add quality to day-to-day living and to life in the long run as well? These are questions deserving of the best study and thought of mankind—in this country, beginning now, and with the whole of mankind as a goal.

Some Meanings for Education

If our young people are to succeed in facing the actual world of today they must build along various lines; knowledge of many kinds is needed, including knowledge of the world today; also needed are adequate character, values, insights. At every level of education these are not only relevant but essential. All our young people, for example, must build the inevitable fact of "becoming" into their thinking and learn to face it constructively. They must face the fact that change is inevitable in life, not to be feared but welcomed as opportunity to look again and improve. They must learn to think for themselves and also to exchange ideas as to novel proposals and situations, to sift better ideas from those of lesser worth. They must learn the fact of interdependence, in our smaller worlds and also in the larger one; that we cannot rely on the well-being of the United States without helping to effect the well-being of other countries also. Most of these countries look to the United States as friend, in one degree or another, and we must justify this feeling. We must learn that we are unusually fortunate in resources and abundance of goods, while others struggle against heavy odds for what we take for granted. We must come to feel our interdependence, that the world cannot be good for us while others live in dire need; that we have now abundance of goods and potentialities in far greater degree than before known, but that material goods do not necessarily bring friendship; this we must understand.

We must awaken young people, and their elders, to the fact that a Life-Good-to-Live depends on more than things, more than striving for ourselves; it depends also on helping to make life good for others; on helping to solve human problems; on gaining insight into ways of helping others; on growing to be wiser, broader persons.

We must build in our young people moral standards which include respect for the feelings and rights of others, others even in distant lands; which in-

(Continued on page 113)

Keeping children with age-mates can assist development.

Anne Christensen

Age-Graded Elementary School

THE organization and grouping of children in an elementary school should be in keeping with what is known about children growing up in the world today. Physical and social development, best determined by chronological age, should be the primary bases for grouping children. Both are obvious criteria of status in childhood groups.

Keeping children with their own age group makes for sound emotional, mental, physical and social growth and adjustment. Children learn from one another. They extend to each other basic belongingness that promotes growth and learning. Age-graded organization is geared to the idea of regular normal living for each child in a group representing the whole range of achievement, background and ability for a given age. Such organization includes a complete cross-section of the population with each child developing at his own rate. On the other hand, when homogeneous grouping is used, children sometimes feel a stigma in being assigned to a slow group. It is undesirable to have children develop a general sense of slowness or of brightness when the slowness or brightness actually measured represents only a narrow range of testing. Parents usually resent having their children in a slow group and teachers, as a rule, are reluctant or unwilling to accept an assignment with a slow group.

There is a marked difference between individual children in any given age group, even those grouped homogeneously. Teachers must, therefore, place more emphasis on accepting every child as unique and valuable, regardless of his intelligence quotient. Thus, individual differences are viewed not as a necessary evil, but as a source of strength and richness as they are in the community and in the nation. Schools should tend to unite the people, not separate them along class or ability lines.

A skillful, well-informed teacher does not expect to teach the same thing in the same manner to all the pupils in his room. He plans intelligently in terms of individual differences. He manages groupings that allow for individualiza-

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All the children in the school come singing as they gather around the piano.

tion of instruction so that each child learns at his own pace and feels that he is a contributing member of the class.

Ability Groups

Learning is best measured by the resultant behavior of children. It is sequential and meaningful and involves problem solving techniques, democratic procedures, and the acquisition of information. Knowledge, understanding and wisdom gradually become more available to the child. The teacher knows each child well when he confers regularly with parents concerning their mutual guidance. Limited class enrollment is an advantage, since adequate space is necessary to facilitate individual and group activities. Grouping within the classroom is flexible in terms of purposes, problems and needs.

Reading and arithmetic are grouped along ability lines. As a rule children are grouped differently in each of these subjects. The index for subject grouping is the child's previous achievement record, his potential, and teacher judgment. Tests used properly, as an aid to teaching and as *one* additional basis of judgment, have great value. However, when undue emphasis is placed on the test results and when these test results become crucial to the hopes and aspirations of pupils and parents, it is only a step to a position in which testing will actually determine the curriculum.

Keliher states, "The present form of measurement concerns itself with a few of the many traits that are concerned in learning, and measures these skills out of their context of use." [1] Learning,

[1] Alice V. Keliher. *A Critical Study of Homogeneous Grouping*. New York: Bureau of Publications, Teachers College, Columbia University, 1931. p. 69.

then, is the integration of experience, while testing measures are only a partial phase of learning.

Interest Groups

Grouping can be exciting for everyone in the age-graded plan. Part of the day children might gather into groups on the basis of one interest or another. Perhaps a few ten-year-olds would like to prepare and tell a story on the felt-board for groups of younger children during book week, or two twelve-year-old boys might be interested in building an Atlas missile model to use in a report.

A special need of children is the basis for another grouping. Thus, five or six eleven-year-olds who are having difficulty with long division might work together with the teacher. As soon as this particular skill is understood and learned the group is dissolved. There may be unlimited variations of such groups.

Unit Groups

Units in social studies, health and science afford opportunities for experiences in large and small groups. The unit approach makes an appeal to many different interests and utilizes to the maximum a great variety of abilities. Here the talented teacher provides a wealth of reading materials to ensure a wide range of difficulty, content appeal, and points of view. He supplies tools, equipment, visual aids and resources of all kinds and helps children develop research skills so they can work independently. He spends brief periods in helping groups or individuals to set up their work, encourages some to gather data, draw conclusions and apply their learnings to new situations, challenges others to do more difficult work. He observes all the interplay in these groups to gain an understanding of each child's behavior, his feelings, his attitudes and his learnings. These are signs that show where the child is and indicates how the teacher will plan for him within the whole group.

Friendship Groups

Children wish for and need friends. They have a great need to be included, respected and liked. In general, when this need is unfulfilled, learning will be impeded. The understanding teacher will group so that the chance of increasing the spread of friendship is extended. When children depend on one another for success in school, it is wise to keep them together. Seldom will it be necessary to separate them. Even adults apparently tend to work better and accomplish more when they associate with friends.

Classroom Groups

The class as a whole assists in the overall planning, discusses common problems and events, sets up goals and practices social amenities preferably at the beginning of the day. The teacher, especially one who works with the same children from two to four years, really knows them and plans experiences emphasizing unity, continuity, wholeness and relatedness. Evaluation is a vital ongoing part of learning so children share in evaluating their accomplishments.

School-wide Groups

Many activities and experiences provided for the entire school or mixed-age groups help develop a feeling of oneness

(Continued on page 121)

Florence C. Kelly

Ungraded Primary School

Described is one plan to promote continuous growth.

IN the Milwaukee Public Schools, the ungraded primary school is more than a theoretical plan of organization; it is an accomplished fact. Since its initiation in one school in January 1942, the ungraded primary organization has been adopted on a voluntary basis in 114 of the city's 116 elementary schools. Such educational progress has taken place during the past 18 years because the Board of School Directors and the administration, principals and teachers, parents and the general public have come to recognize and appreciate the values inherent in the ungraded primary organization of school administration.

To provide readers with an understanding of the ungraded primary school program and how it operates, this article emphasizes certain points. These are: (a) the basic philosophy underlying the plan of ungraded primary organization; (b) some desirable classroom practices which help in its implementation; and (c) certain observations of a general nature, relating to the recording and reporting of pupil progress, and the like.

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A Philosophy of Growth

The ungraded primary organization is a means of making functional a philosophy that has been talked about for years. It is a most effective way of adjusting teaching and administrative procedures to meet the individual differences among children. It permits adaptations to the variations in pupils' mental ability, physical capacity, and social development. The ungraded primary organization is *not* a method of teaching, but rather an administrative tool, designed to encourage and promote a philosophy of continuous growth.

Flexible Grouping

How does this work in practice? Under the ungraded primary school arrangement followed in Milwaukee, children who have successfully completed the kindergarten enter Primary One, or P^1, the first semester above the kindergarten. Each child then progresses to the next semester above the kindergarten through the fourth, fifth, sixth, seventh, or eighth semester, as the case may warrant, before entering the fourth grade.

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Each child is placed in a class suitable to his maturity and his particular needs.

The designations, P^1 through P^8, serve only as convenient indicators of how many semesters a child has been enrolled in the primary school. These symbols do not show his academic achievement. Each child's progress is measured in terms of his achievement in reading, language, arithmetic, and other areas of learning rather than the amount of time he has spent in the primary school.

Each child is placed in a primary school class according to his over-all maturity and his particular needs. As a result, most primary school classes above P^1 include several semester groupings, such as P^{3-4} or P^{4-5-6}.

The total length of time a child spends in the primary school depends upon his abilities, accomplishments, and readiness for advancement to grade four. The range is from four to eight semesters. For most children, the work requires six semesters.

Within primary school classes, a plan of flexible grouping is carefully followed. In this way, problems created by individual differences in learning ability, academic progress, and social adjustment are met. Whether a child's maturation is fast or slow or "in the middle," he is grouped for work within his class in accordance with his own needs and in relation to the progress he makes in meeting these needs.

Throughout the school year, the rate of learning of each child is studied, and the teacher, parents, and child himself are made aware of progress patterns. Achievement, however slow, is recognized and the rate is maintained in keeping with the child's potentialities and his pattern of progress. Teachers feel free to concentrate on this progress because the pressures of meeting the standards and norms of artificial grade groupings have been removed.

Pressuring a child beyond his ability will not necessarily develop desirable learnings, attitudes and habits. If retardation appears, indicating that a child may need seven or eight semesters of preparation before entering the fourth grade, his primary school experience may be extended accordingly. No child is asked to repeat what he has already learned. Rather, he is helped in adjusting his learning to his own slower growth pattern.

A child who is maturing rapidly also needs consideration. The program of acceleration for such a child must be both interesting and challenging and may result in a shorter time spent in primary school. As each teacher adjusts curriculum content and materials to his group of children he finds a range of learnings and interests. This is especially true in the field of reading. To provide for continuity in the child's developmental program a pattern of 12 progressive levels of achievement has been established. To meet the range of abilities and interests within primary school classes, a variety of reading materials is provided.

Reporting Progress

Small sets of many different books, classified according to reading levels are made available. All children need not read the same book nor the same number of books. Since no one series is adopted as a *must*, each teacher is free to select reading materials from an approved list of many books. Books for developmental and independent reading are supplied in abundance.

An individual reading record sheet lists the developmental books by levels. On this sheet the teachers check the books read by each child and the semester in which he read them. This record accompanies the child through his primary school experiences and helps the teacher in planning the reading program.

A progress card, sent to parents three times each semester, indicates growth in learning skills and in personal and social development. Each child is marked on the basis of his own ability and effort, not in comparison with other children. Because each child's rate of growth will vary from time to time, only two marking symbols are used in the skill area: "C"—making progress, and "D"—needs to improve. Specific items under personal and social growth are checked only when a child needs to do better. The reading level chart is printed on this card and progress from one level to another is indicated by dates. A new date means the child is reading comfortably on the next level.

Door cards for classroom identification are labeled, "Primary School, Miss ————," with no indication of semester groupings within that room. These help to complete the picture of our ungraded primary.

Each year brings new children and parents, new teachers and principals, new schools and districts. With this growth and development come many varied educational problems and challenges. One of these is the efficient grouping of children for effective learning. From Milwaukee's experience, it would seem that the ungraded primary school organization provides the solution to this problem during the important early years of elementary education.

Robert Flahive, Editorial Assistant, Milwaukee Public Schools, helped prepare the final manuscript of this article. Many of the ideas in the article are incorporated in the handbook for parents, "The Primary School," Milwaukee Public Schools, 1960.

Rodney Tillman

Self-Contained Classroom: Where Do We Stand?

Children profit when teachers know them well.

ONE-teacher-to-a-classroom is the predominant pattern of organization in elementary schools throughout the United States. "Self-contained classroom" is the term usually applied to this arrangement. In many school systems this organizational pattern was a direct outcome of study and research in the area of human growth and development. During the 1940's, several studies of elementary school organization were made. Each study reported an increase in the number of school systems having the self-contained classroom as its basic organizational pattern.

Most educators who work in elementary schools define the self-contained classroom as one in which a pupil is under the guidance of one teacher for most of his school-sponsored activities. The teacher is expected to have much knowledge about each child in the class and to use this knowledge in providing guidance and assistance to the pupil and to his class. The self-contained classroom does not exclude the pupil from having contact with other teachers, other pupils, various specialists and school and community resources.

Within a school system, assignments of elementary school classroom teachers are generally made in one of two ways. Either a teacher works with one class and has responsibility in all subject matter areas or a teacher works with several classes and has responsibility in a limited number of subject matter areas. At the present time, various proposals and demonstrations which require a teacher to work with several classes during the school day are receiving nationwide publicity.

There is at present a lack of carefully documented research evidence to show comparisons between patterns of organization and achievement in subject matter and growth in other areas of learning which are generally accepted as goals of the elementary school. It is important, therefore, to re-emphasize those values which come to children whose teachers know them well. Clara R. Chiara has written: "The teacher who knows the learner as an individual does not fragment the child, neither does he assess

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him solely on his ability or talent in one narrow field. Rather he views each student in his totality as a person of innate worth who has strengths and weaknesses in varying degrees in the many different life activities in which he engages. This climate of acceptance and respect encourages each student to move toward optimum realization of self." [1]

Perhaps the safest prediction one can make regarding today's elementary pupils and the years ahead is that the pupils will experience a continually accelerating rate of change in all areas of life. Basic to comprehending these changes will be an ability to understand the many interrelationships which exist in our society. This ability is best developed in the elementary school when pupils are given opportunities to work on problem areas which cut across subject matter lines. Emphasis given to these lines by teachers and parents is primarily responsible for their being recognized at all by pupils.

Separating the elementary school curriculum into specific areas and assigning a portion of the program to a certain teacher is an extremely complex matter. This becomes apparent as one studies the time allotments and the fusions of subject matter areas being made in some school systems where classroom teachers are assigned to teach specific subjects. Almost any subject can be found fused with practically every other subject taught in the elementary school. In studying time allotments for a specific subject one also finds great variation.

Alice Miel has discussed the possible contributions of the self-contained classroom to efficiency in learning with respect to mental health factors, use of time, and availability of resources and facilities. She states, "If a type of organization has more promise for accomplishing certain goals (better mental health, more integrated, more complete learning), then our best course is to work toward the realization of the potential that is there." [2]

Promising Practices

It is also important to identify practices that are considered most promising in today's elementary schools. We can then determine how each practice will be promoted or hindered by a specific organizational pattern. Some promising practices promoted by the self-contained classroom include the following:

1. Parent-teacher conferences can be held. In these it is possible to discuss a pupil's intellectual, physical and social achievements and cooperatively plan next steps for working with the pupil.

2. Special resource teachers and classroom teachers can work as teams in teaching groups of pupils. A team approach enables the teacher specialists to be of maximum assistance to the group. Significant all-school activities such as sings, exhibits and special programs are possible when the resource teachers and classroom teachers work cooperatively on such undertakings.

3. Field trips can be conducted that extend over a longer period of time than normally allotted for one class.

4. Upper-elementary school pupils can work in many ways with younger elementary school pupils. This practice should enrich the school program for both the older and younger pupils. Plan-

[1] Clara R. Chiara. "Effective Education in the Self-Contained Classroom." *The Self-Contained Classroom.* Washington, D.C.: Association for Supervision and Curriculum Development, NEA, 1960, p. 2.

[2] Alice Miel. "The Self-Contained Classroom: An Assessment." *Teachers College Record,* Vol. LIX, No. 5, February 1958, p. 286-87.

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ning for such activities should involve all teachers and pupils who participate or who are affected by the program.

5. Activities that are under way simultaneously can be aimed at taking care of individual needs and interests. In each classroom, frequent periods of time should be provided for each pupil to work in those areas in which he is weak, or those in which he is strong or has special interest. The teacher who knows the pupils well will be able to guide each pupil into activities that will provide a balanced program for him.

6. Materials can be used in various ways that seem appropriate to the learning activity in progress. For example, the arithmetic book is very helpful, not only for mathematics but for the development of specific reading skills; and a map is often used in the teaching, not only of geography, but of arithmetic.

7. Problems can be studied that do not lend themselves to any one subject matter area. For example, a study of conservation or weather would draw upon areas such as reading, science and social studies.

It is true, of course, that one can identify situations in which the human relations and the promising practices possible in a self-contained classroom do not actually exist. One must realize, however, that no single pattern of organization can always assure a good school program. There is at present considerable public pressure for improving our schools. Many persons apparently believe that almost any change in organization will bring about the desired improvement. Educators, therefore, need to channel the public interest into constructive improvements, such as expanded in-service programs and longer periods of employment for professional personnel. Taking the easy, and often regressive, way of dealing with such pressures by drastically changing the existing pattern of organization may prove to be too costly to the pupils as well as—eventually—to the society.

A self-contained classroom offers the pupil opportunities for: (a) the development of strong human relationships, (b) a teacher who knows him well, (c) integration of subject matter areas, (d) individualized instruction, (e) growth in self-understanding and self-respect, and (f) choices in the use of his time. Since these opportunities are easier to provide in the self-contained classroom organization, this pattern should continue to be the predominant one in the schools of the United States.

Reaching the full potential of the self-contained classroom is an ever continuing process. It is hoped that each reader will view his own situation not only in terms of "what it is" but also in terms of "what it might be."

Philip Lambert

Team Teaching for the Elementary School

What occurs when two or more teachers have responsibility for a group at a given time?

AMONG current developments in education, there is one which today is causing interest and excitement, as well as some negative reactions. This development is *team teaching*. Though many experiments with instructional teams have been made in junior high and high schools, the team teaching plan seems to have equal if not greater relevance to the needs and objectives of the elementary school.

The basic principle behind team teaching is not new, but older than formal education itself. The family unit, made up of many cooperatng members—parents, grandparents, aunts and uncles, older brothers and sisters—was in the teaching business long before the first school was built. Today, children continue to learn basic skills from the members of their families most interested or best qualified to teach them. Team instruction, too, is based upon the idea that every teacher excels in some, but not all, of the abilities and techniques that are necessary for the education of a single child. Ideally, these special abilities should be used to the fullest extent, so that each child will get the best possible education his school can offer in every area.

The present system of elementary school organization, however, attempts to give every teacher the same number of pupils, the same time schedule and curriculum, and the same responsibility, regardless of his or her special training, experience, skill, or capacity for taking responsibility. In addition, many elementary school teachers are overwhelmed with nonprofessional duties. Up to 40 percent of their time is spent in keeping attendance, collecting milk money, typing stencils, correcting routine tests, supervising playground and lunchroom activities, etc. Although most elementary teachers are sold on the educational importance of these tasks, actually how educational are they? This use of professional personnel for routine work that could be done at far lower cost by a secretary or a student aide is a waste of our limited teaching resources. It is as if qualified doctors were required by law to spend from two to three hours a day taking temperatures, filling in charts, and sending out bills.

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In its simplest form, team teaching occurs whenever more than one teacher have responsibility for the same group of children at a given time—for example, whenever a certified teacher is assisted by a student teacher. In a more complex form the instructional team is a group of teachers of different experience and abilities aided by various nonprofessionals. The team may have from three to six or more members and be responsible for an elementary school class of as many as 150 or more children. The class may be all of the same grade level or of varying grade levels.

There is no typical instructional team. Let us look, however, at one team that might be assigned to a class of about 125 children ranging in age from five to eight years. At its head is the team chairman—an outstanding and experienced teacher who, let us say, is especially strong in the fields of language arts and social studies. He is assisted by two other fully licensed teachers: one has had several years of experience and some special preparation in the teaching of primary math and science, while the other, who has just received his credentials, is especially interested in arts and crafts. There are also two teaching interns who are completing their college or university preparation, and an instructional secretary, perhaps a mother, who serves as a part-time teachers' aide. The salaries of these last three staff members added together come to less than that of two fully qualified teachers. Since the team chairman receives an increased salary in recognition of his special responsibilities, the cost of the whole team is approximately the same as that of the teachers who would have been assigned to the same number of children under the present system.

Team teaching should not be confused with the departmentalized plan in which each teacher is responsible primarily for one subject area. The members of an instructional team, though they are all specially competent in certain areas, have their primary responsibility towards all the children in their large class. For example, if one teacher presents a science demonstration to the large class, the other teachers assist the demonstration teacher during the presentation. Therefore, when the groups break down into small work groups, each teacher has heard and participated in the demonstration from the beginning. This enables them to be effective small group leaders.

More than a dozen communities in the country have initiated team teaching in the elementary school. In most instances the experiments are in a developmental stage, and the staff members involved are not ready to evaluate their efforts completely at this time. However, both the Franklin school in Lexington, Massachusetts, in cooperation with Harvard University, and the Washington school in Madison, Wisconsin, in cooperation with the University of Wisconsin, are developing experimental designs to compare team teaching with present methods of teaching. This serious effort is taking place despite the fact that some researchers believe there are too many variables to make it possible to set up a completely valid experimental situation, in which only one aspect of team teaching would be tested at a time.

Preliminary results from the Franklin school have been inconclusive. However, the staff has reported that pupil achievement and adjustment remained the same notwithstanding the unsettled conditions of experimentation. The Washington school has begun a five-year project de-

signed to answer such questions as these: What effect does team teaching have on pupil achievement in the various subject areas? What changes took place in children's perception of authority figures under team teaching conditions?

Informal evaluation seems to show that team teaching works in a variety of situations.

What Problems Are Solved?

Let us look now at some typical everyday problems of elementary education and see how team teaching might help to solve these:

1. Ricky has just had a fight in the play yard; he is now crying uncontrollably in the hall as class begins. What was the fight about? Who started it? What should be done? A few minutes' attention from someone who can learn the answers to these questions and who knows Ricky would probably clear up the matter. But Ricky's teacher cannot leave the rest of the class even for a few minutes. She will have to send him to the principal's office, even though this may make him more disturbed. With an instructional team, someone who is familiar with both the child and the immediate situation is always available to help.

2. Mrs. McKay, a third grade teacher, has been ill off and on for several weeks. What effect will this have on the lives of the children in her class? Under the present system, each time she is absent a substitute will be sent in, and the chances are that each time it will be a different substitute who is completely unfamiliar with the children, the lesson plan, and perhaps even the school building and personnel. She will not know that David has trouble with division, or that Susy will quiet down if she does not sit by Jane. She does not know whose turn it is to take attendance, what to do with the two turtles that have been brought to school, or where the nurse's office is. Probably she will be able to do little more than baby sit with the children until Mrs. McKay is well enough to continue their education.

The team system does away with this problem. In an emergency, any one of the other team members can pitch in and the instructional program can continue unimpeded. If a substitute is assigned to the class, there will always be someone available to answer her questions and tell her whatever she needs to know.

3. Sally just cannot get along with her teacher, Miss Grey. Sally has never been a disciplinary problem before, but she is lively and boisterous, and Miss Grey, though an excellent teacher, is a quiet, reserved kind of person. An experienced principal knows that all teachers cannot work effectively with all children. Should he move Sally to another room? Even if the child is not upset by this change, the principal may have to spend weeks reassuring Miss Grey that it was not her fault that she couldn't help Sally adjust and that she is not a failure as a teacher. If Miss Grey is part of an instructional team, however, this situation need not arise. An ideal teaching team will be made up of teachers with varying personality types, and it should contain someone who will find Sally easy to teach. Others may have special ability when it comes to dealing with the slow child, the shy child, etc.

4. Peter is an exceptionally bright boy who is considerably ahead of most of his classmates academically. However, he is rather small for his age and not unusually mature emotionally. Should he be moved ahead into a class with

larger and older children, or should he stay where he is, with less and less interest in what is going on in class? Under the present system there is seldom any really satisfactory solution. But in the type of team teaching plan in which children of different ages are grouped together, Peter will be able to work at the level of his ability and still continue to play with friends of his own size and age. Even if the class does not include older children, its large size means that it is more likely to contain enough other bright children so that special rapid-progress groups can be set up.

5. Mr. Johnson, one of four sixth grade teachers in a large elementary school, is an enthusiastic amateur scientist and has taken a course in elementary science teaching. Under the present system, only the 30 children who have the luck to be assigned to Mr. Johnson's class each year will be able to profit from his interest and preparation. Team teaching is still too new to have definitely established the best patterns of organization for all content areas. It has been shown, however, that subjects like science and social studies are particularly well suited to large-group teaching and the use of visual aids. In a team teaching setup, Mr. Johnson can make the introductory science presentations to a group of 120 children. He will also be available to help the other members of his team in planning follow-up work for smaller groups.

These are only a few examples of how team teaching might help a school to carry out some of the practical objectives of elementary education. A good team teaching program has other important advantages. It presents exceptional opportunities for the preservice education (and financial support) of undergraduate student teachers and also of students who already hold an A.B. degree but must take certain courses in order to earn a teaching certificate. For the qualified teacher, it provides an opportunity to move ahead in the profession without leaving the classroom where his ability and experience can be of most use. Team teaching also gives staff members a chance to work together on a common task, to share their ideas and their problems. They will be able to see good teaching practices in action and to learn new techniques. Some teachers today tend to look upon supervision as a threat to their autonomy. Perhaps the supervisor is seen as an investigator from outside from whom all problems must be concealed, rather than as someone who can give help in solving problems. In team teaching, the supervisor is regarded as a team member who shares both the work and responsibility.

Are there disadvantages in team teaching? In the beginning, the fears most often expressed were that the children would feel lonely or lost in such big groups, that they would be confused by the continual changing of rooms and teachers, and that they would miss having one person to relate to (or cling to). In practice, these fears have proved to be more or less unfounded.

The real problems of team teaching have centered around such matters as organization, curriculum planning, budgeting, and school architecture. Team teaching is still in an experimental stage today, and setting up a good instructional team requires a great deal of skilled organizational work. Many observers have remarked on the vast amounts of time that are spent in discussion and planning. Though an established team teaching program should cost no more than the present system, getting one started is expensive in terms of money as well as

(Continued on page 128)

"Imperatives" and "electives" are related in an experimental plan.

Glen Heathers

The Dual Progress Plan

RESPONSIBLE educators continuously seek new ways to improve the quality of our schools. In the elementary school, many efforts in recent years have been intended to strengthen the self-contained classroom. The proponents of that plan believe it provides the essential framework for educating the "whole child"—one general elementary teacher who teaches almost all areas of the grade-level curriculum to one grade-level class, mainly in one general-purpose classroom.

"Strengthening" the self-contained classroom has meant modifying each of its basic features in the direction of specialization. Specialist consultants or specialist teachers have been employed to help, or to replace, the general elementary teacher in physical education, music, arts and crafts, remedial reading and speech, library, and foreign language. Special purpose rooms have been provided for several curricular areas. Special groups of students have been formed, most often to meet the needs of gifted students and slow learners. Special curricular offerings have been introduced to "enrich" the basic grade-level course of study.

The self-contained classroom, as employed today, is a patchwork. A good question is whether another plan could provide better for developing the young child's intellectual potentialities and his personality, and could offer a more satisfying professional role to the elementary teacher. One educator who thinks so is George D. Stoddard, Chancellor of New York University. He has challenged the self-contained classroom concept by offering the semi-departmentalized "dual progress plan." Currently, under grants from the Ford Foundation, this plan is being demonstrated and tested in grades 3-6 of the elementary schools, and in grades 7 and 8 of the junior high schools, at Long Beach and Ossining in New York. The Experimental Teaching Center at New York University is helping the school systems implement the plan, and is responsible for evaluating it.

In the dual progress plan, all teachers are full-time specialists in one of six curricular areas—language arts-social studies, mathematics, science, physical edu-

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cation, arts and crafts, and music. This feature of the plan is intended to insure that every student, every year, receives instruction in each of these six curricular areas from a teacher who knows the area well, likes to teach it, and knows how to teach it to young children.

Very few general elementary teachers can meet these requirements. This fact has been recognized by many school systems that now employ elementary specialist teachers of physical education, music, arts and crafts, and remedial reading and speech. The dual progress plan assumes that special competencies are also necessary for teaching the "basic" curricular areas—language arts, social studies, mathematics, and science. Obviously, elementary specialist teachers must not be narrow subject-matter specialists; they must understand young children, and know how to teach them, as well as know their special subjects.

The dual progress plan bears its name because, within it, students progress in language arts, social studies, and physical education according to the usual grade system, while they progress in science, mathematics, and the arts on a nongrade-level basis. In the plan, a student spends one half of the school day (morning or afternoon) in an ability-grouped class of his grade mates, studying language arts—social studies with a "core" specialist teacher, and physical education with a specialist in that area. During the other half day, he attends different cross-graded, ability-grouped classes in mathematics, science, arts and crafts, and music under different specialist teachers.

The theoretical justification for "dual progress" is the distinction between "cultural imperatives" (language arts and social studies), which everyone in our society is expected to master well enough to have a basis for effective social living, and "cultural electives" (science, mathematics, and the arts) in which level of achievement is expected to depend greatly on the individual's abilities and interests. Grade-level placement, the grade-level course of study, and grade-to-grade promotion are considered appropriate for the former but not for the latter. Instead, nongraded grouping and advancement are employed to permit the gifted student in mathematics, science, or one of the arts to advance without grade-level restrictions as fast and as far as his abilities permit, while freeing the slow learner from the unnecessary requirement that he "keep up to grade level." In the plan, slow and average learners spend as much time studying the cultural electives as do gifted students; it is the rate of progress that differs.

Individualized Learning

A feature of the dual progress plan is that it provides for all students, the slow, the average, and the gifted, the sort of individualized learning programs that many school systems offer to gifted students only.

The present study allows five years (1958-63) for placing the plan in operation and measuring its effects. All this time is needed, since it takes years for a school to install a semi-departmentalized plan. Most time-consuming is the re-education of teachers whose training and experience were as general elementary teachers. Despite an intensive in-service program during the first two years of the study, the teachers still have much to learn before they become expert and confident as specialist teachers of their chosen curricular areas.

The research evaluation of the dual progress plan employs a pre-test—post-

test design, rather than one providing a simultaneous comparison of experimental (dual progress plan) and control (self-contained classroom) treatments. The design being employed is appropriate for a preliminary test of the plan. A controlled study might be undertaken later. Such a study, to provide adequate controls, would require a large number of school systems under each of the two plans—at least as many as were included in the Eight-Year Study.

What do the data obtained during the first two years of the study indicate about the strengths and weaknesses of the dual progress plan? Students' achievements, as measured by standardized tests, showed no definite gains or losses under the plan, except that the ablest students appeared to benefit from nongraded advancement in mathematics and science. Data from a personality inventory given to all students in the plan revealed no effects of the plan on the frequency of emotional and social problems that children report. An intensive observational study of children's adjustment in the plan is under way. This study should resolve some of the conflicting opinions of principals and teachers as to whether the dual progress plan has increased or decreased the frequency of children's emotional and conduct problems.

A considerable majority of students in each of grades 3-6, of all ability levels, reported that they liked the dual progress plan. They enjoyed changing classes and having different specialist teachers. Some students complained about the lack of a private desk, about carrying books from class to class, and about conflicting requirements made by different teachers.

The great majority of parents who replied to a questionnaire about the effects of the plan on their children favored the dual progress plan. They felt their children were enjoying school more and learning more than they did before the plan was introduced. These findings should be interpreted with caution since only about one-third of the questionnaires mailed to parents were returned.

Teachers in the plan, thus far, are nearly equally divided into those who prefer to teach in the plan, and those who would prefer to teach in the self-contained classroom. A greater number of teachers favored the plan at the end of the second year of the study than at the end of the first year. A considerable majority of the teachers expressed themselves as in favor of specialist teaching, ability grouping, and nongraded grouping and advancement.

Teachers' objections to the plan centered about problems of getting to know the children well, difficulties in teaching low-ability groups, and concerns about whether emotional and conduct problems could be dealt with effectively within the plan. Also, a good many teachers, particularly during the first year of the study, found the transition from the work of general elementary teacher to that of specialist teacher very demanding of their time and energy.

The results reported here should be viewed simply as preliminary indications obtained during the first two years of a five-year study.

The Long Beach and Ossining school systems are performing a notable service to American education by participating in the test of the dual progress plan. It is proper that educators are following the study with interest and forming opinions about the dual progress plan, while reserving their final judgment of the plan until the present study has been completed.

Robert S. Fleming, Beatrice Hurley,
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Reactions to the Dual Progress Plan

Testing of assumptions and results is needed.

ONE of our most cherished dreams for children is to realize our quest for quality education. It is encouraging that many efforts designed to improve the elementary school are under way. However, we do our profession serious harm when we initiate new programs without concern for basic values and when we accept them with limited or no evidence of their merit. The history of elementary education is not static. There have been changes. Its values are well established and there are many strengths in the elementary school of the mid-century. Leaders in elementary education have been alert to receive and act on suggestions, advice and help.

There are those, however, who tend to accept any innovation as being "good." They do not examine the new in terms of its expressed purposes and specific consequences. One should not pass judgment on a given new program without examining the assumptions which underlie it nor without having a clear-cut statement of the purposes to be achieved.

Some innovations in education are urged by persons outside the profession, often innocent of knowledge of what has been found best for children. To be sure the professional educator in the elementary field does not have a monopoly on ideas for improvement. However, those working closely with children and their teachers should be central in shaping basic changes. It would seem that teachers, principals and others working closely with elementary schools should be the best prepared persons to chart the course for improvement. Teachers and elementary school specialists did not actively participate in the initial design of the Dual Progress Plan. The plan was financed by The Fund for the Advancement of Education and is presently being demonstrated in two public school systems in New York State—the Ossining and the Long Beach systems.

Purposes Differ

The Dual Progress Plan places emphasis upon a departmentalized system, graded in certain areas and nongraded in other subject areas. Teachers concentrate on their subject speciality. Children as young as eight have six different teachers in a day. No one teacher sees them through the whole day to integrate the

diverse subject offerings. Hence, no one teacher knows the child well. Parents must consult with a number of teachers to learn about their child's progress.

Most modern educators would agree that the primary goal of the elementary school is to create an environment favorable to the discovery, promotion and nurture of the unique potentials of each individual child. In addition, careful provision for wholesome group living is cherished. Such an environment has certain distinguishable characteristics including the following:

Develops close, friendly relationships between children and the teachers

Builds regard for the role of purpose in living and learning to the end that children engage in quality experiences

Provides opportunities for children to plan, discuss, arbitrate, disagree, solve problems, think, evaluate, value

Recognizes the need for knowledge

Recognizes that continuity of living and learning is essential and makes flexibility of work necessary

Promotes a maximum of challenge for the development of interests

Permits teachers to observe a child's value system over a long period of time

Fosters creative growth of each child.

Quite different assumptions undergird the development of the Dual Progress Plan and similar plans for organizing the elementary school:

1. There is an assumption of diagnostic precision, and a faith in the validity and reliability of achievement tests. This assumption must operate when the organization of learning groups is by subject areas. There must be an acceptance of some quality of sameness or homogeneity that is expressed in a similar test score. There is an assumption that all children having an achievement of 4.7 in science are at the same starting point. Moreover, when these data are combined with other tests, there is an assumption that the child's ability to advance further in this area can be predicted along some prearranged sequence of science understandings and knowledges.

2. There is an assumption, in use of the term "nongraded advancement," that the learnings, toward which this plan is directed, progress in an orderly and sequential manner. There are levels of "easy mathematical concepts" that can be identified, taught and used as steppingstones to more advanced types of learnings.

3. There is an assumption that the growth and development of children can be best provided for in a curriculum that is presented by a series of teachers whose orientation and training are focused upon the subject for which they are responsible. Previous plans requiring many separate subject experiences have necessarily almost eliminated from the school program rich experiences for children, such as trips, dramatics, and three dimensional art.

4. There is an assumption that the specialist teacher, through concentration on specialized knowledge, can bring about maximum all-round growth in children.

Problems in Implementation

The implementation of many of the departmentalized type of programs such as the Dual Progress Plan creates a host of the same problems that led to the abandonment of similar proposals in past

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years. Obviously this plan is better designed for large elementary school units which provide multiple sections of the same grade in order to permit the intricate groups to be structured. Further, although the arrangement was not part of the original Dual Progress Plan, it was not accidental or unexpected that both school systems in which the plan is being carried out adopted homogeneous grouping for their elementary grades.

Several curricular problems are suggested by the implementation of the Dual Progress Plan. These are:

1. In order to get children to the special teachers and special rooms for instruction, half the children are moving somewhere every 40 minutes or so. This prevents continuity in learning activity. It also creates traffic problems, confusion and consequent disciplinary rigidity that must accompany the movement of large numbers of young children.

2. The lesson already learned in many communities is that improvement of instruction and learning cannot be gained through mechanical redistribution of teachers and children. This is especially true when such plans attempt to oversimplify the activity of teaching by assigning to it a more restricted subject centered role.

3. One of the features of the Dual Progress Plan is its claim for individualizing instruction. However, the evidence on compartmentalizing learning into subject areas seems to indicate that this purpose cannot be achieved by such a plan. Consider the plight of the special teacher of mathematics who meets a succession of groups of children for 40 minutes each. During the day he may meet over 150 children. Individualization of instruction cannot be achieved when time and numbers of children in combination with static teaching materials, curriculum guides, and a subject centered program provide the dominating structure.

4. The separateness of the subjects under the direction of specialist teachers introduces instructional problems requiring a high level of communication and coordination among the teachers. It is difficult to provide time for essential team planning. This has been the perennial problem of secondary school teachers. Without coordination of effort, the needs of children are met sporadically and in isolation. The school day becomes a series of subjects taught in separate compartments, thus forfeiting the learnings that grow out of the integration of language arts with science, or music with social studies, and the many combinations of activities which give substance and meaning to the school experiences of children. In a more wholesome plan the classroom teacher values the expertness of the specialist when he is functioning as a co-teacher and consultant while the classroom teacher ties together the children's learnings.

5. The complex planning and scheduling of classes with limited time must ultimately lead to the reduction of the number of intensive out-of-class activities that children experience under a more flexible time schedule. The problems of scheduling field trips that lead to many kinds of quantitative, language, and creative experiences increase with the numbers of teachers and class groups that are involved. A logical result is the reduction of enriching experiences for children, and a greater adherence to the preplanned curriculum.

6. The current emphasis on the special areas of science and mathematics as well as the revering of the specialist, result in an alleged higher status for the specialist teacher than for the "core

teacher" who has assumed the functions of the generalist. This tends to create problems of staff morale. Also such emphasis on these subjects places in a minor role curriculum areas such as language arts that have been defined as the "cultural imperatives," while the "cultural electives," science and mathematics, become, at least in a surface way, more prized and valued.

Evaluation Is Needed

It is unfortunate that the Dual Progress Plan was not conceived as an hypothesis to be tested rather than as a demonstration. The fact that it is a demonstration with no control groups, indicates acceptance without genuine research. In terms of research design, some appropriate plan of matched groups could have been built in to enable the investigators to compare the experimental (DPP) with other teaching plans. This comparison would have made possible some mature basis for acceptance or rejection of the hypothesis.

Then, too, often the pressure of inaugurating a "new" plan with much publicity, many visitors, and continuous testing yields "improvements." This is often temporary and illusory. Had it been possible to give equal attention, support and help to a more developmental elementary program and to build appropriate evaluation techniques for both the Dual Progress Plan and the comparison program, a sound study would have been possible.

As it now stands, emphasis in the Dual Progress Plan is on academic learning. There is extensive use of achievement tests. These tests are to provide a comparison of pre-test and post-test data. Such procedures often freeze the curriculum and teachers tend to teach for the test. Also, these procedures limit evaluation to achievement testing rather than employ a more comprehensive plan in which a variety of evaluative procedures (formal and informal) are used. The emphasis on achievement testing fails to make use of unlimited informal classroom techniques which supply important data on attitudes, interests, creativity, work habits, values and concepts. Useful among these techniques are observations, self-inventories, children's work, exhibits and conferences. Furthermore, use of these more personal ways of evaluation lead the teachers to look more closely at the individual child rather than his individual normative achievement score. One of the persistent needs of *all* elementary education is to develop diversity in evaluation techniques. Evaluation can be a means of extending learning.

Today's secondary schools are struggling with their problems created by over-departmentalization and subject-centeredness. It is a shame to impose the old organizational pattern of secondary education upon the elementary school.

Those who have worked in a devoted manner in the past for curriculum improvement in the elementary school look to the vast backlog of experience, past and present, and to research to chart future directions. Dedication to a conception of elementary education grounded in the philosophic principles of total development enables teachers to create a sound learning environment. Leaders need to communicate with teachers, parents and children to formulate hypotheses for significant continued research. Cooperative, continuous evaluation practices are essential if next steps for improvement are to be valid.

Many elementary educators would gladly participate in a study of the Plan based on genuine comparative research.

Paul C. Rosenbloom

What Is Coming in Elementary Mathematics

New experimentation may change mathematics teaching.

WE are perhaps the first generation in history who must educate children for a society which we can only vaguely foresee. We have a tremendous problem in trying to teach a child what he will need to know when he emerges from school 12 to 16 years from now. The complexity of our task might be indicated if we were to try, for example, to make a list of the occupations, industries, government programs, and countries which have come into existence during the past 12 years. Education for the most rapidly changing society in history is useless unless it prepares a child to meet problems that he has never encountered before. The doctrine that the curriculum should be determined by what adults find socially useful is woefully inadequate for our society.

Why Change Is Needed

We must conceive of education as a lifelong process. The main emphasis in the curriculum must be on the tools and the motivation for continued learning, and on the moral and esthetic values which guide our use of knowledge.

Mathematics has three main functions in the curriculum:

1. Deductive reasoning, which is the real subject matter of mathematics as a science, is one of the two methods for acquiring new knowledge at firsthand. (The other is the method of inductive reasoning, the method of the natural and social sciences.)

2. The literature of most branches of knowledge is, to a rapidly increasing extent, written in mathematical language. No matter what vocation a person pursues, he will need to be literate in mathematics.

3. Mathematics is the art of creating beautiful combinations of ideas. In preparing a child for the good life, we must expose him to the arts in all their variety, so that he may learn to appreciate beauty in the work of others, perhaps even to create beauty himself.

Thus a mathematics program, to fulfill its purposes, must give adequate attention to mathematics as a science, a language, and an art.

In particular, the skills of arithmetical computation are an important part of the elementary curriculum, but are far from enough in and of themselves.

Another source of change is the rapid growth of the science of mathematics.

Research does not merely extend the frontiers of our knowledge. It also probes deeply into the foundations of such knowledge. Research often has implications for the most elementary things we teach. Thus the concept of set, which was developed by the work of Cantor about 80 years ago, was immediately recognized as the basis for the number concept. We are just beginning to introduce this concept into the secondary schools. Ultimately this concept will be taught in kindergarten.

Changes To Come

It is too early to predict the details of the curriculum which will emerge as a result of the experimentation now in progress. We can, however, confidently foresee some new emphases, of which the following are examples:

1. *Reasoning.* Children will learn skills of reasoning as well as computation. They may discover the proof, for example, that the product of two consecutive whole numbers is always even. They will learn to apply deduction also to nonmathematical contexts. It is too early to say whether, or how much, formal logic will come into the elementary school. Informal deduction, without a full apparatus of postulates, definitions, and theorems, will certainly come.

2. *Laws of the number system.* The algorithms will be explained on the basis of the underlying laws of numbers, such as:

If a and b are numbers, then $a + b = b + a$ and $a \cdot b = b \cdot a$.

Examples: $3 + 4 = 4 + 3$, $3 \cdot 4 = 4 \cdot 3$.

If a, b, and c are numbers, then $(a + b) + c = a + (b + c)$, $(a \cdot b) \cdot c = a \cdot (b \cdot c)$.

Examples: $(10 + 2) + 5 = 10 + (2 + 5)$, $(3 \cdot 2) \cdot 10 = 3 \cdot (2 \cdot 10)$.

If a, b, and c are numbers, then $a \cdot (b + c) = (a \cdot b) + (a \cdot c)$.

Examples: $3 \cdot (20 + 1) = (3 \cdot 20) + (3 \cdot 1)$, $(10 \cdot 3) + (10 \cdot 4) = 10 \cdot (3 + 4)$.

Thus the processes for computing $12 + 5$, $3 \cdot 21$, and $30 + 40$ will be explained by means of these laws. Presumably when the children understand the reasons behind the algorithms, they will learn them better and remember them longer than when they learn these processes mechanically as rote skills.

3. *Elementary number theory.* A new intrinsic motivation will be introduced into arithmetic by leading children to discover interesting relationships between numbers. We shall have such problems as:

Calculate each of the products
$1 \times 2 \times 3$, $2 \times 3 \times 4$, $3 \times 4 \times 5$, $4 \times 5 \times 6$, etc.
and divide your answers by 6; what do you notice about the remainders?

In the present curriculum we motivate learning of arithmetic by showing that it is good for other things, which the children supposedly find interesting. In the future we shall also help children discover that arithmetic is fascinating in itself.

4. *New subject matter.* In the title of this paper we have deliberately referred to "mathematics" rather than "arithmetic." Geometry will certainly be taught from kindergarten up, and not merely in the form of mensuration exercises for practice in arithmetic. It will be primarily the empirical study of the physical space around us, with emphasis

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on observation, experiment, and measurement. A formal deductive development will still be left to the secondary school, but some informal deduction will probably be introduced early. Probably graphs and coordinates will enter rather early in the curriculum.

Similarly, probability as an empirical study of the laws of chance will likely be taught in elementary school. It will be an excellent source of applications of fractions, and will be connected with the study of the biological and social sciences.

Some algebra will be taught early. Subtraction and division will be taught as the processes for solving equations such as

$$2 + x = 5 \quad , \quad 2 \cdot x = 6.$$

Children find the study of equations such as

$$2x + 3 = 11$$

simpler and more exciting than problems such as

$$132\overline{)\ 26938}$$

in the conventional program. Some of the drill in arithmetic will appear in the form:

Solve the equation

$$\frac{x}{15} = 12,$$

rather than:

multiply 15×12.

This seems to work especially well with retarded children.

5. *Integration with other subjects.* We will teach children to describe nature and society in terms of quantitative data. The children will explore the world around them by counting and measuring. They will learn how a scientist predicts and tests predictions, and how we make social decisions on the basis of an analysis of data.

Some of the geometry may appear officially as part of the art curriculum. We shall develop space perception by the construction of drawings and sculptures.

Whatever is written for the mathematics curriculum will contribute to the reading program. We shall consult experts on reading in our revisions of the mathematical curriculum.

We shall thoroughly reconsider the grade placement of topics. While acceleration will not be a primary goal of our reforms, a modest acceleration will be an inevitable by-product. We shall experiment to find ways and means to adjust for differences in ability so that each child may learn at his own pace and depth. Certainly the present widespread practice of a differentiated reading program and a uniform mathematics program will be changed.

We shall certainly take advantage of the psychologists' work on children's thinking. It is scandalous that such basic work as that of Piaget is hardly mentioned in the education of elementary teachers, let alone applied in the design of the curriculum.

Centers of Activity

The School Mathematics Study Group (SMSG) is a national project for the improvement of mathematical education. It is sponsored by the main organizations concerned with American mathematical education, and is financed by the National Science Foundation. Professor E. G. Begle of Yale University is the Executive Director. He has an advisory committee appointed by the presidents of the sponsoring organizations.

SMSG believes that the necessary improvements in this area can be brought about only by effective cooperative ef-

forts. Such efforts must be carried forward by school and college mathematicians, school administrators, and teacher educators working on an equal basis in an atmosphere of good will and mutual respect.

In February 1959, SMSG held a conference on elementary school mathematics. As a result it decided to extend its activities down to kindergarten. In the summer of 1960 an SMSG writing team, working at Stanford University, produced materials for grades 4-6 intended for all pupils. These will be tried out in various parts of the country during 1960-61, and will be revised on the basis of this experience. SMSG may begin work on grades K-3 during 1961 or 1962.

The SMSG elementary panel overlaps in membership with the Elementary School Curriculum Committee of the National Council of Teachers of Mathematics, affiliated with NEA.

SMSG considers that the most urgent task is to find out what substantial improvements can be made quickly on a large scale with our present teaching corps. Its writing team aims to produce materials which can be taught by the teachers now in schools, with in-service education at most during a previous summer or concurrent with the first year of experience with the new materials. Thus the changes introduced by SMSG will be modest and conservative, though they may appear otherwise to some teachers.

The more radical projects described in the following paragraphs are intended to find out what children can learn, and then to educate teachers to teach this properly. As we begin to obtain a supply of teachers who are well prepared mathematically, we shall be able to use such materials on a larger scale.

The University of Illinois arithmetic project, directed by Professor David Page, is at present exploring the use of smaller units of instruction with gifted children in grades 4-6. Sometime later Page may try to develop a systematic curriculum on the basis of his experiments.

Professor Robert Davis, of Syracuse University, has been teaching many new topics to children of all ability levels in grades 3-8. His materials work superbly in the hands of teachers whom he trains to teach. It is not yet clear how well teachers of average ability can learn to teach by the methods he proposes.

The materials by Hawley and Suppes, of Stanford University, on geometry for the primary grades seem to be effective even when taught by teachers of average ability. It will be interesting to see how successful the materials by Suppes on logic for the primary grades will be.

Similar experimentation is being done by Professor Gundlach, of Bowling Green University, under the auspices of the Greater Cleveland Educational Research Council.

Professor F. E. Koehler, of the University of Minnesota, has been writing materials on algebra for the fourth grade which seem to be quite suitable for use by ordinary elementary teachers.

My materials for gifted children in grades 5-6 have been tried out in a preliminary edition in several places, and will soon appear as an ordinary textbook. SMSG is sponsoring a writing project under my direction to produce curricular materials for grades K-3 intended for all children. This will be in conjunction with research by Lydia Muller-Willis and myself on the psychology of elementary mathematical concepts.

As indicated previously, we shall probably see a rather conservative curriculum produced by SMSG for wide use, and

several more radical curricula suitable only for well prepared teachers. We shall actually not be able to teach what children can and should learn until we face the problem of the mathematical preparation of elementary teachers.

Problems of Staff

We have about 900,000 elementary teachers, very few of whom have studied any mathematics beyond the eighth grade level. With existing manpower, the task of in-service education of elementary teachers is almost insuperable. While we should certainly encourage elementary teachers to attend the various institutes financed by NSF, it is probably more efficient to concentrate our attention on principals, supervisors, and teacher educators, especially in view of the rapid turnover of elementary staffs.

School systems should be encouraged to use mathematicians from nearby colleges or junior colleges as consultants to their elementary staff. In many cases a well prepared secondary school teacher may be able to assist in the elementary program.

Until the recommendations of such bodies as NCATE that all elementary teachers have academic majors begin to take effect, we are not likely to obtain enough new elementary teachers with adequate mathematical preparation. There will be increasing experimentation in the use of special teachers for mathematics and science. A successful experiment of this kind is directed by J. R. Mayor, Director of Education, American Association for the Advancement of Science. It certainly seems odd that school systems should employ special teachers for art, music, and physical education, and not for academic subjects.

The self-contained classroom may no longer be sacrosanct. There will certainly be experimentation with team teaching and departmentalization in elementary schools.

It is imperative that leaders in curriculum development take an active part in the development of and experimentation with the new materials. The channels of communication between research scholars and school people must be kept open. Each of us must assume his share of responsibility for learning about the new developments and spreading the information.

While we must be aware of the need for careful experimentation and evaluation before new materials are introduced on a wide scale, we must also take our share of the responsibility for trying out the new developments, and cautiously extending their use when we find out what works.

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A definition of responsibilities can help the curriculum director.

C. Glen Hass

Role of the Director of Instruction

MANY curriculum workers are less effective than they might be in achieving their objectives because they inadequately define their own roles and their role relationships with others. Outstanding among those persons in school systems whose roles and responsibilities often are not well defined are the curriculum workers usually known as directors of instruction, curriculum directors, or assistant superintendents in charge of instruction.

Recently a group of graduate students examined educational literature in an attempt to determine the generally accepted responsibilities for the director of instruction. After a remarkably fruitless search, the group decided that much of the confusion regarding this position occurs because its distinctive role expectancies in a democratic society have not been well defined. This article is an attempt, in the light of the writer's experience as a director of instruction, to define those roles and responsibilities of this position which are likely to be most conducive to the achievement of democratic goals in curriculum improvement.

Extensive recent research demonstrates that each leader's and each member's perception of his role governs his action in a group; each group member's perception of the roles of others determines his behavior toward them. The morale of a school system's staff is directly related to the clarity, interrelatedness and agreement as to the expectancies for various roles. This is particularly true of the director of instruction, whose actions are of concern to every other person employed by or interested in the schools.

Existing Perceptions

Many agree that the position of curriculum director is both administrative and supervisory. They agree also that the position involves responsibility for planning, directing and coordinating the total instructional program. In specific situations, usually some but not all of the following responsibilities of the position are accepted and recognized:

1. *Instructional program improvement.* Planning, developing, recommending, inter-

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preting and administering major policies and procedures for the over-all instructional program of the schools

2. *Instructional staff leadership.* Coordinating the activities of all groups of instructional workers and leaders so that a unified instructional program may be achieved

3. *In-service education.* Coordinating and planning for the in-service education of all staff members including teachers, principals, supervisors and members of the superintendent's staff

4. *Instructional and in-service education budget.* Coordinating the development of the budget for the instructional program and for the program of in-service education

5. *Action research studies.* Encouraging action research studies and the development and use of action research skills by the total school staff

6. *Group maintenance.* Stimulating friendship, respect, mutual trust and warmth among all persons concerned with the school program

7. *Professional and public understanding.* Providing leadership, with the superintendent, in developing understanding and appreciation by the school board, the professional staff, and the public concerning the most effective teaching objectives, methods and content in a democratic public school system.

While these responsibilities for staff leadership, curriculum improvement, action research, in-service education, preparation of budget, and development of professional and public understanding are theoretically often accepted as roles of the director of instruction, in practice they frequently are not functions of this position.

Many readers of this article will know of curriculum directors who are not permitted to work in all grades, kindergarten through twelve; who are not permitted to coordinate the activities of some instructional workers or leaders; who are not permitted to test promising instruction procedures; who are not permitted to suggest items for the instructional budget; who are not permitted to propose necessary budgetary items for the in-service growth of the staff; who are not permitted to participate in the selection of principals or supervisors who will help to implement a coordinated instructional policy. Or perhaps some readers will know of instruction directors who do not adequately define their own roles in these areas and who by default or lack of vision fail to perform these leadership tasks.

Situational Nature of Leadership

We frequently tend to excuse our failure adequately to define our roles and responsibilities by saying that leadership practices must be tailor-made and are different for each local situation. Current leadership theory partially supports this view but a too-great dependence on this theoretical premise results in a failure to recognize that concepts of leadership are also contingent upon the dominant values and needs of a society.

Currently, in our society, there is a pressing need for school staff members to pay more attention to the larger situation—the context of American democracy and its destiny in today's world.

Instructional Program Improvement

The context of democracy makes it necessary that the instruction director develop a structure which stimulates the involvement of all teachers and other staff members in instructional program improvement.

A council on instruction, with teachers elected as representatives from each school, often serves this purpose. This council provides a channel for identifying areas of instruction for study and im-

provement. New system-wide programs and policies are developed by appropriate ad hoc committees. The work of these committees is periodically reviewed by the council on instruction.

It is equally important for the director of instruction to be sure that adequate channels are provided for the instructional program changes that may be suggested by members of the local community, and by the needs of the state, nation or world. Structure must be provided to receive suggestions of parents, experts in various subject fields, sociologists, political scientists, and all other citizens. The local P.T.A.'s should be viewed as an appropriate channel for these suggestions. State and national groups interested in education should also be viewed as sources of possible proposals for change. Consultants obtained as part of the in-service education program should be seen as sources of help in appropriately taking account of national needs and trends.

Channels for determining how other school systems are dealing with problems should be established through the exchange or purchase of curriculum materials and through attendance at conferences.

The instruction director should be sure that means are provided for obtaining and utilizing the suggestions or criticisms of students. It is his role to insure that this is done.

Finally, the director of instruction should be constantly active in assisting the staff to reach agreement regarding goals and to appraise the progress which is made toward the goals. He should institutionalize the evaluation of the instructional program in the light of behavioral changes by the learners.

Several facets of his role regarding staff leadership require continuing attention by the instruction director. He should encourage different schools and different school groups to do different planning at the same time and in different ways. Only in this way will teachers be encouraged to develop new ways to meet the particular needs of the children they serve. Only in this way can the insight of each staff member be utilized.

He should also use all possible means to develop communication among schools regarding curriculum work in progress in the individual schools in order to share worthwhile developments and aid in the devising of system-wide policies where needed. Face-to-face relationships, councils, committees, bulletins, printed resource units and guides, and conferences all may be used to achieve this goal of adequate communication and staff leadership.

The curriculum director should have authority to call meetings of and to stimulate cooperative group planning by the instructional supervisors of the school system. Consultants who work in elementary and secondary schools, in subject areas such as mathematics or art, in special areas such as the education of the physically handicapped or the slow learner should come together regularly to plan for the coordination and improvement of the instructional program. The director of instruction should similarly be able to call meetings of elementary or secondary principals on a regular basis for the consideration and improvement of the instructional program. Through his participation in all of these meetings he will help to provide communication and coordination.

All of these means of communication will also be needed so that ideas suggested by the concerns of the local, state,

(Continued on page 106)

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(Continued from page 103)

national or world community will be adequately and appropriately considered by the staff.

In addition, the director of instruction, the superintendent, and other staff members should regard it as appropriate that the director of instruction make suggestions concerning the selection of teachers, principals and supervisors who will implement instructional purposes and policies. The instruction director should participate in defining the qualifications for and the responsibilities of other leaders whose main job is the improvement of instruction.

In-Service Education

The instruction director's role constantly is to attempt to raise the insight of all staff members, parents and other citizens concerning instruction. Some specific ways of doing this are described in the following section on planning the in-service budget.

One of the most important aspects of the director of instruction's responsibilities for in-service education is the development of group membership skills and leadership role competencies on the part of all staff members. He should give regular attention to the development of improved ways of working and the encouragement of emerging leaders. Development of these human relationship skills should be regular and continuing aspects of the in-service education program. Leadership and group membership skills should be among the regular focuses of attention in preparing for conferences, workshops or school faculty meetings.

It should not be forgotten that the director of instruction should accept responsibility for giving staff leadership to provisions for the orientation of new teachers to the school system. This is a particularly important aspect of the in-service education program.

Planning the In-Service Budget

A responsibility of the director of instruction that is frequently overlooked is the preparation of a budget for the professional growth of all staff members. Continuous in-service education is needed by all staff members to maintain familiarity with new subject matter, with recent developments in human growth and learning, and with continuing cultural and social changes which create need for curriculum change. While these needs are generally recognized, the necessity for funds to provide for staff growth is often overlooked through default by the director of instruction. It is his responsibility annually to alert the superintendent and the school board to the need for budget items to cover the following activities:

1. *Time for curriculum work.* This should include funds to cover the regular meetings of the system-wide "council on instruction" including elected representatives from each school. It should also include funds for the time of "ad hoc" and standing committees who have been assigned responsibility for work on curriculum problems.

2. *Intervisitation of teachers.* Observing good teaching often stimulates growth on the part of teachers. Several visiting days should be available to new teachers during their first year of teaching. All teachers should be able to make such observation visits upon request. Substitute teacher funds should be amply available for this purpose.

3. *Purchase of professional materials.* The professional library should include the newest materials in all subject matter areas as well as new materials on all other pertinent professional matters. Funds should be

available to provide a "curriculum laboratory" of materials from other school systems.

4. *Attendance at professional meetings.* It is the responsibility of the director of instruction to request that professional travel funds be made available for representative teachers as well as principals and supervisors. The school system should be represented by teachers at national conferences in each subject matter field as well as at state meetings. Failure to provide such funds sometimes results from the neglect on the part of the curriculum director to present the need and to point out the stimulation received by many staff members through being represented by one or more of their number.

5. *Local workshops and conferences.* Every school system needs the time and the stimulation provided by workshops organized to work for several days or weeks on problems carefully selected by staff members. Funds must be provided to make it possible to employ visiting consultants to staff these conferences.

6. *Publications.* Each school system should be able to publish, in attractive form, the resource units, teaching guides, and statements of instructional policy which are the work of the local staff. There is also need for "newsletters" to be sent regularly to members of the staff to keep them informed of the work of curriculum councils and committees, plans for workshops, and new professional materials.

7. *Employment of outside consultants.* This need is greatest in the small school system which lacks an adequate supervisory or consultant staff, yet it is an important need in *all* school systems. It should be possible to obtain the services of a visiting consultant for one school staff which is working on a problem, for all of the teachers of a particular subject meeting on a system-wide basis, or for members of a curriculum committee working on a problem with which they want expert help.

Directors of instruction sometimes are afraid to request what appear to them to be the large sums of money needed for these in-service growth activities. In most situations, however, all of these programs may be amply covered by a sum which amounts to one-half of one percent of the school system's annual operating budget. What a small amount to provide for continuous growth, constant challenge, and high morale!

Significance of Action Research

The encouragement and facilitation of action research, though it is not generally recognized as such, is one of the chief responsibilities of the director of instruction who wishes to be a dynamic, democratic leader for instructional improvement. A research program tied to a plan of action can help us to learn why a given program or practice is successful and why another is not. When we know why, we can then design procedures to improve successful decisions and to revise unsuccessful ones.

Unfortunately most teachers and many other leaders in schools believe that educational research requires understandings and skills that are far beyond their reach. These mal-perceptions have hindered and frightened the teacher who might like to try out hunches regarding better ways of teaching or of helping individual children. These impressions have tended to deter teachers from attempting what most of them could do and do well in defining problems for study, hypothesizing, developing research designs, procuring evidence, and generalizing within the limits of the evidence gained.

Action research emphasizes that the method of scientific inquiry belongs to all individuals who care to utilize their intelligence. Action research, like democracy, emphasizes respect for the right of the individual to exercise and formu-

late his own judgments. Teachers, administrators and supervisors can make better decisions and engage in more effective practices if they are able and willing to conduct action research as a basis for these practices and decisions.

The director of instruction, charged as he is with the in-service growth of all staff members and for instructional improvement, has particular responsibility, in a democratic setting, for helping all staff members to recognize that educational research is not an absolute. The research quality of an investigation is relative. Through his way of working, the director of instruction may encourage the cooperative recognition of responsibilities and problems, individual or group hypothesizing, group planning for controlled study, collection of data, and implementation of tentative conclusions. He is in a strategic position to give leadership to action research studies and to the development of the needed competencies by all staff members.

Group Maintenance

It is important that the instruction director's behavior reflects friendship, mutual trust, respect and warmth in the relationships between himself and his co-workers. It is an important aspect of the job of this assistant superintendent to keep interpersonal relations pleasant, provide encouragement, give minorities a chance to be heard, stimulate self-direction, and increase cooperative endeavor. He should evidence a feeling of permissiveness toward having problems and a willingness to give support to those who make mistakes while seeking solutions to their problems. No matter how large the group, he should seek to avoid being impersonal in his behavior. His example may do much to encourage similar group maintenance behavior on the part of others.

Professional and Public Understanding

The instruction director has a crucial role in the development of public understanding of the goals of the school, and of appropriate teaching content and methods. His chief responsibility in this respect is constantly to strive to secure consensus on the part of the staff and the public regarding what should be done. His is the responsibility for seeking out procedures so that all potential presenters of ideas may discuss their proposals with other persons interested in the schools, seek and secure data, and reach constructive agreement. There is no other way to get constant improvement in the schools of America than by getting broad participation in the planning.

Teachers and other staff members must have a sense of freedom, understanding and emotional security before they can share in planning with parents and other citizens. This condition cannot be attained unless teachers perceive the instruction director and other leaders as responsive to their ideas and as the source of security when hunches are tried or mistakes are made. The development of understanding and initiative must begin with the faculty and progress toward the involvement of the community. Study groups, advisory councils and citizens councils on instruction will be among the channels needed.

Clarification of Role

Statements such as the present article should assist in clarifying role perceptions regarding the work of the director

(Continued on page 136)

Ronald C. Doll

Communicating Educational Ideas

Research findings give clues to better staff communication.

"WHERE do you keep your course guide?"

"In the bottom drawer of my desk—assuming that it's still there. Why? Who wants it?"

This little dialogue between two classroom teachers can be interpreted variously:

1. Some teachers are careless and unprofessional.
2. The course guide in question must be a poor one.
3. If teachers would only read the documents prepared by curriculum committees, central office personnel, and other influential persons in school systems, they wouldn't need special help in putting best practices into effect.
4. Presumably this particular course guide was not adequately explained by school administrators to their staffs.
5. Course guides, courses of study, outlines and syllabuses are worthless curriculum materials.
6. Communication of ideas is a complex interpersonal activity of much greater scope and depth than curriculum workers have generally conceived it to be. Surely, it transcends the mere distribution and "installation" of course guides, notwithstanding their quality.

This article supports interpretation number six, in the preceding listing. It does so on the basis of curriculum workers' experience and on the basis of research data developed during the 1950's by specialists in social psychology, sociology, and human communication.

Communication in Organizations

How may a status leader help teachers acquire, share and modify ideas which come to them from curriculum committees, research bureaus, and other idea-creating agencies? This question suggests two subsidiary questions: (a) What does research evidence say about the manner in which communication is achieved? (b) By a slight stretching of the imagination, what notions may be inferred from the research data about organizational and functional changes in schools and school systems to improve communication of ideas?

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Research studies point repeatedly to the importance of achieving genuine, effective communication on a person-to-person, neighborly basis (1). Neither the written word nor electronic devices can substitute for personal contact. Personal decision making which leads to concrete action is influenced mainly by what the members of one's intimate group are saying and doing (2). How one votes, what one buys, and the fashions one adopts are determined largely within the inner circle of one's acquaintances (3).

People communicate best with those whom they like and trust (4). They tend to meet these persons in informal situations, with ample time arranged for communication. Each person is likely to find within his own group one or more persons to whom he relates easily. As in sociometric choice, one person is often considered to be a best or favorite individual with whom to communicate (5). When a member of a group is divergent in his viewpoints, the other members spend much time (at least for a while) in attempting to communicate with him. The total effect is delay or loss in widespread, efficient communication.

These statements lead to the generalizations: (a) that persons who share common interests communicate readily about matters affecting their interests (7), and (b) that social cohesiveness is necessary to adequate communication. The first generalization appears sensible, even self-evident. The second implies that both emotional viscidity and geographic proximity are necessities for the interdependence that social cohesiveness can develop. As interests shift, new groupings are formed. Each newly organized group creates problems for itself, and for responsible status leaders, in achieving social cohesiveness.

Group size has an effect in determining quantity and quality of communication. Large groups, e.g., of from 25 to 50 members, tend to impede communication. Seven and 10 have sometimes been suggested as optimum numbers for group size. One investigator found that an increase from seven to 12 members impeded communication (8).

Some attention has been given to the nature of leadership that facilitates communication. Frequently, emergent leaders seem to be accepted by group members as better aids to communication than are status leaders. Having been nominated by their peers, they tend to understand and identify with goals which their peers accept (9). Sometimes they have a direct, if unofficial, line to higher authority, or they fulfill a cultural or a status need like that for a big brother or a father (10). They are usually subject to, and therefore sensitive to, the norms of their groups. They know that they have power *with* as well as *over* their groups and they are therefore able to speed decision making (11). Often they become more persuasive as they remain longer with their groups (12). Opinion leaders originate ideas, sanction them and diffuse them. Thus they encourage development of new ideas and modification of old ones, just as they help communicate ready-made ideas that emanate from outside sources (13).

Because these outside sources sometimes pose a threat, people want to know what ideas are taboo for consideration and communication. If personnel know the sanctions under which they operate, they tend to communicate concerning matters for which they have definite responsibility.

A plan or scheme for communication should be carefully considered and deter-

mined in an organization in which face-to-face communication becomes unusual or difficult. The communication scheme might include "wandering minstrels," i.e., traveling communicators who could talk with the members of each group about recent developments in other groups (14).

Communication seems to be improved by knowing where one stands with one's fellows, and also with persons farther up the hierarchical ladder (15). The desire to communicate is thus closely related to favorable morale, which is stimulated by fairness and consistency on the part of persons in authority (16).

When mass media of communication must be used, these should be truthful and accurate. They should deal with matters of concern to members of the organization. Also, their messages should be brief, direct and pointed. Several short presentations may prove more effective than a single omnibus one. Communicators should hold reasonable and modest expectations about the ability of literary or technological media to communicate with the rank and file of personnel who have had little or no part in formulating the messages these media carry. Certainly mass media function best when they carry messages that have greatest meaning for their recipients (17).

Communication among groups within organizations tends to occur by means of "natural" communication networks (18). Administrators of organizations often let these networks go unnoticed at the very times they would be benefited by knowing what influence and status, as well as informal communication arrangements, have to do with transmission of messages from group to group.

Good, open communication not only passes information: it encourages doubts, modifies attitudes and stimulates thinking in several ways. Without it, stereotypes develop, extreme individualism sets in, and the messages that emerge from sources of knowledge become distorted.

Application to School Practice

The generalizations stated in the preceding paragraphs are necessarily tentative. They are based on fragmentary evidence, and they do not encompass all that is known about communication within organizations. However, despite their limitations, they suggest communication practices that are little used in American schools. The reader is invited to study the research data further and to draw additional inferences from the broader and deeper range of data which will be developed in the future.

Generalizations in the preceding paragraphs imply the following plan of organization for acquiring, sharing and modifying educational ideas:

Status leaders should provide ample time and opportunity for personnel organized in dyads, triads, and other small groupings to get together. If possible, group size should not be permitted to exceed a membership of seven. Members of the groups should like each other, and should experiment with groupings and regroupings based on sociometric choice. They should work near each other, as in team teaching situations, and should be encouraged to share their professional problems with each other. School buildings should be constructed and adapted to accommodate teams and groups of sizes appropriate to facile communication.

Within each communication group, an official communicator should be designated by his peers. He should possess some skill in communication and should

be one of the best accepted members of his group. He should receive communications from other portions of the school and school system, as well as from the outside educational world, and should assume leadership in transmitting ideas and urging examination of them. In addition, he should organize dyads of the most compatible persons for informal conversation about these ideas. When he has gathered the reactions of his group to a given set of ideas, he should transmit these reactions to a traveling communicator (a "wandering minstrel") who can inform the idea originators about the reactions. Each official communicator should hold his position as long as his group wishes him to retain it. If the official communicator is not the chairman of his group, he should assist the chairman in planning the development of new ideas and the modification of old ones, and he should then communicate the indigenous thinking of his group to other communication units in the school system. Continuous feedback of ideas and reactions to ideas is important.

All official communicators within the system should learn what matters have already been decided by higher authority, e.g., by state, county and local boards of education, and the communicators should then tell their constituents that these matters are outside their areas of decision making. They should carry news about welfare provisions which benefit the staff, and about other developments that help to build morale. Whenever possible, they should enlist the cooperation of unofficial communicators who have close friends in other communication units.

Educational ideas should be written into course guides, syllabuses and other documents, and they should be reported electronically to school staffs, only *after* the ideas have been discussed, analyzed and, if possible, experimented with. Prior to this point in idea creation and communication, anything that is put into writing should be regarded as tentative. Formal written and oral statements should be brief, pointed and directly usable. They should affirm truthfully and accurately the utility of ideas which have been examined by as many staff members as possible. Persons who prepare documents should recognize that two basic kinds of messages are needed: messages to those who want to *know,* and messages to those who merely want to *know about.* These two kinds of messages might be incorporated within the same document, or they might be issued separately.

Actions Needed

Beyond promoting the organization of a plan for improving communication, educational leaders with broad responsibilities can take several direct actions. These include:

1. *Keeping lines of communication short.* The leader of any communication unit should have easy access to the highest level of educational management.

2. *Striving to improve communication within the several small units in each individual school.* This is the level at which good communication counts most.

3. *Providing arrangements for identification and continued use of emergent leaders, including emergent communicators.* Research data seem to point to the worth of emergent leaders in facilitating communication at the grass roots.

4. *Granting personal approval to educational ideas that have been proved by test.* The educational leader should draw conclusions about the value of ideas primarily from concrete evidence of their helpfulness to the persons who use them.

5. *Furnishing personnel, materials and facilities that are required to improve communication.* Good communication, which results in much in-service growth, should not be rendered ineffective by lack of support.

Nearly everywhere one mingles with teachers and supervisors, one hears that course guides and other curriculum documents have limited effect in improving educational practice. Perhaps we need a breakthrough in organization for communication which would permit continued use of curriculum documents, but would place them in a new position in the total communication scheme.

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Editorial

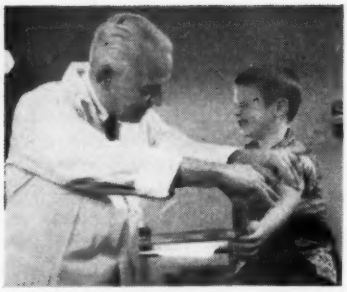
(Continued from page 75)

clude, on the one hand, the obligation of a wider background of knowledge with which to understand the new world, and, on the other hand, a consecrated devotion to our common democracy and its place in the free world.

What further meaning has the foregoing for education toward a new world? The meanings are, of course, endless—the more the question is studied and worked at, the more potentialities will be found.

In conclusion, we can say that three factors make demands on our American education—the fact of change, our interdependence with the rest of the world, and the obligation to realize as best possible the Life-Good-to-Live. We must help our people to understand these demands and accept them as personal obligations; and we must help to have them understood as part of American democracy—what it means for us and should mean also for others in the world.

—WILLIAM HEARD KILPATRICK, *Professor Emeritus of Education, Teachers College, Columbia University, New York, New York.*



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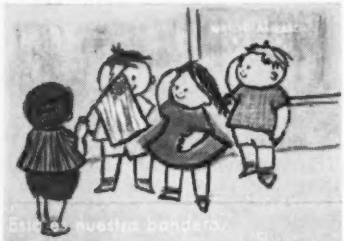

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The Importance of People

Column Editor: Prudence Bostwick

Teaching Is Responsiveness

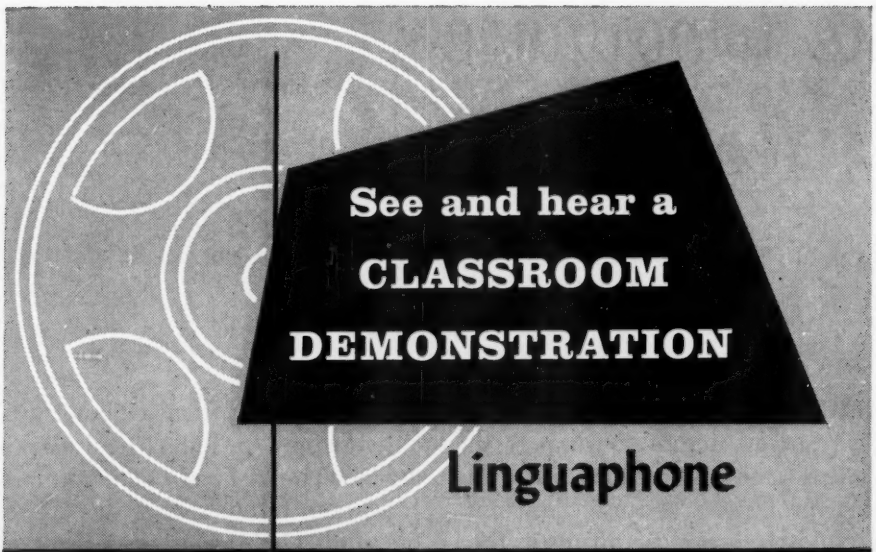
THERE is very little research evidence of a convincing nature to support the notion that men and women enter the teaching profession because they care about children, are more altruistic than others, or wish to enter a career of social service. Instead, studies of occupational preference as measured by such instruments as the Kuder Preference Record and the Strong Interest Inventory seem to indicate that in influencing people to teach "teaching per se is not as important as what is taught."[1] Except for men teaching social studies and men working in school administration, all those teachers who responded to the Kuder Preference Record scored considerably below the seventy-fifth percentile in interest in social service, a score considered necessary to show significant interest in helping others.[2]

As I look back on my own career in teaching, I am confident that it was my desire to share my enthusiasm for poetry and life science that was the deciding factor. It was not my concern for adolescents—I knew almost none—nor my desire to do good in the world that sent me down one August morning after my June graduation from a liberal arts college to apply for high school teaching in my home town. I had had no professional education. In my college days the scientific study of child and adolescent growth and development and of the nature of learning was in its infancy. I would teach as I had been taught. I would be the purveyor of knowledge. I would keep alive in myself and stimulate in my students a love for the literature and botany in which I had majored in college.

I began with zest. But in spite of all my efforts, lyric poetry (Tennyson, Browning, Wordsworth, Masefield, Frost, Millay) did not become the central passion of my teenagers. Instead they were swept off their feet by the "Shooting of Dan McGrew" and "The Highwayman." My tendency was to find consolation for this disappointment in the response of those few youngsters with "high ability" and "adequate backgrounds" who spoke my language. As I read to the class (I insisted on their listening to the melody of the lines and the imagery of simile and metaphor), I found a few answering eyes. But as for the rest, in my resentment and ignorance I was inclined to think that I, too, was casting pearls.

In a study of teacher-pupil relationships under the sponsorship of the Commission on Teacher Education of the

[1] Myron Lieberman. *Education as a Profession.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1956. p. 220.
[2] *Ibid.*, p. 221.



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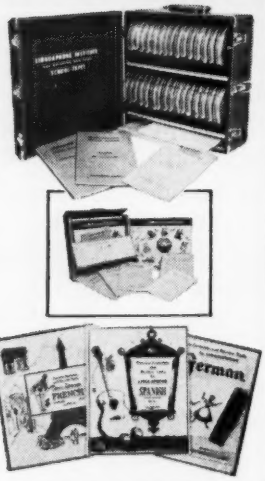

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American Council on Education, Robert Bush made an interesting discovery. He found that, generally speaking, a teacher who knows most about his pupils and is concerned about their individual needs and interests has effective relationships with a larger number of pupils than do teachers whose purpose is primarily teaching subject matter.[3]

I am very sure that the relationship between me and the football boys who studied botany with me in my first year of teaching was not built on any sharing of purpose that grew out of their interests. Mine was to teach them to recognize the leaf, twig, and bark of 40 trees within walking distance of the school (the city had a nursery six blocks away) . . . *quercus alba, quercus rubra, populus deltoides, pinus ponderosa-variety scopulorum*—I remember them nostalgically to this day. The purpose of the boys, on the other hand, was to give out as little energy as possible either in class or on the field trips, to sink exhausted on the curbstone during the observation of trees, and in the end to disappear down a back alley that led to the drugstore. In spite of warnings such as this, I persisted in a thoroughgoing curriculum which included in the spring semester a study of the succession of gametophytic and sporophytic generations in plants.

As I think now, years later, of the poetry and botany which I sought to share with my students, I am keenly aware of how differently I would teach today. If we think that we have made small progress in 30 years, think how changed for the better are the selection

[3] For a thoroughly delightful account of Robert Bush's study of teacher-pupil relationships see p. 255-76 in Maurice Troyer and C. Robert Pace's *Evaluation in Teacher Education*, prepared for the Commission on Teacher Education, American Council on Education, Washington, D. C., 1944.

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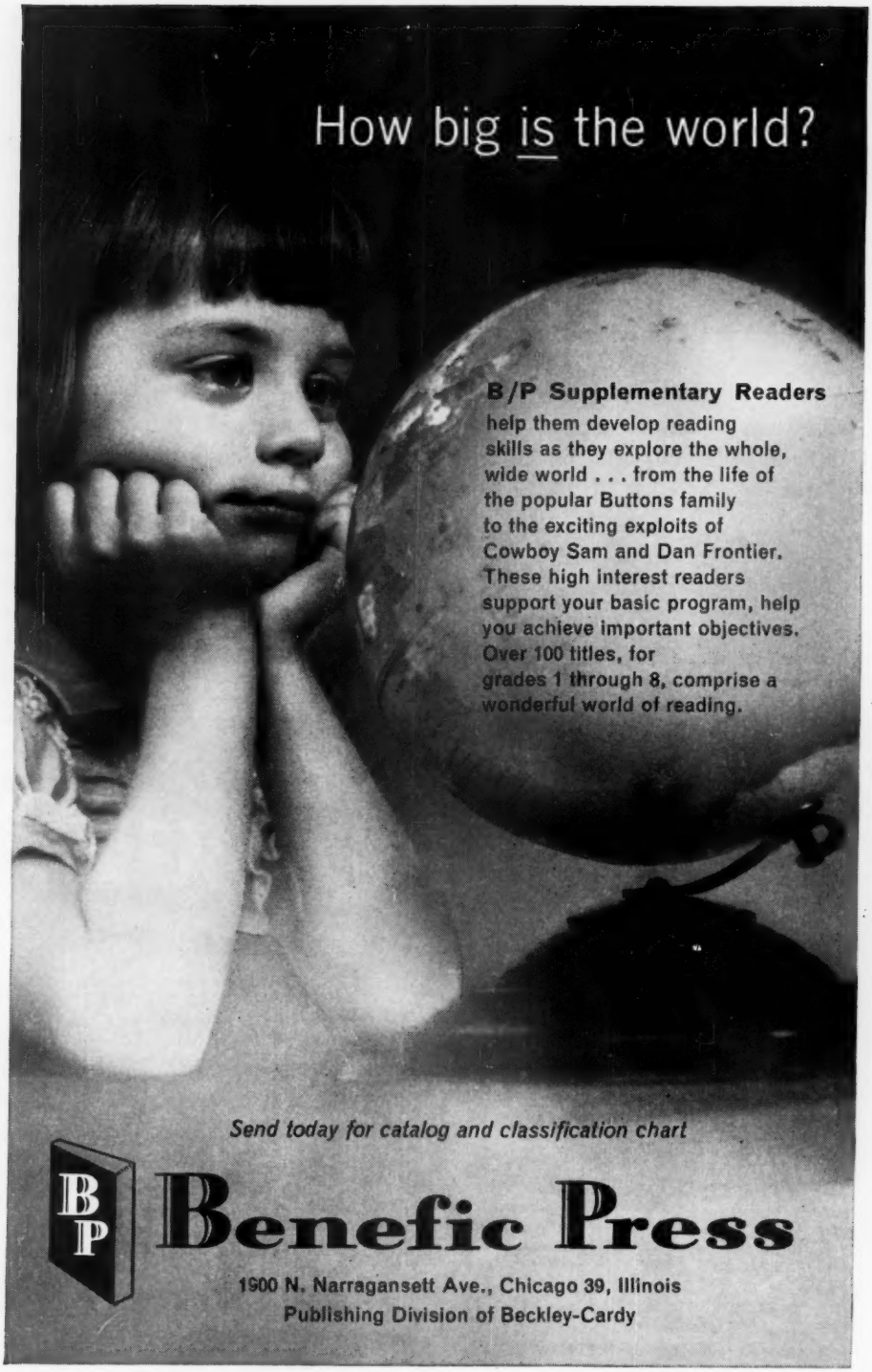
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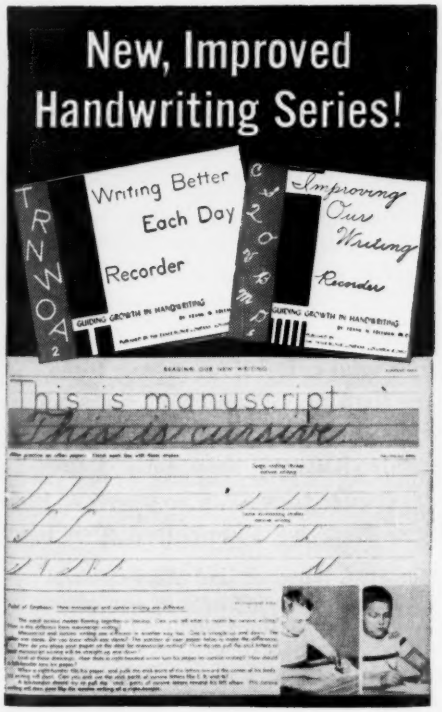
of content and the methods of teaching. Chronology and isolated literary forms as organizing centers for classes in English are being supplanted by organizing themes and concepts that provide significance for content, activities and resources. Readings in literature have relatedness and meaning as they illuminate such problems as "Who Does Your Thinking for You?" "What Is a Good Story?" "What Is a Family For?" and "Who Are Americans?" Sometimes the material is brought together through a topic such as "Laughing Out Loud," "The Search for Values in Living," and "Adventure." This does not mean that one may not have the joy of reading a poem or a story out of context of a unit of work. Usually, however, it is read to clarify a concept, bring additional data to a problem, or deepen a mood.

As far as I know, no one in any grade in the public school is forced to learn the Latin names of trees nowadays. Instead, energy is directed to thinking about problems of community health, about biological processes that are common to all living things, and about the basic structure of living cells and the nature of the fundamental stuff of which life is made. Content is close to human life and its needs. Method is concerned with student participation in demonstrations, special studies, and simple research.

A Changing Role

Even more significant than the improvement in selection and organization of subject matter and learning experiences is the changing role of the teacher. Since he is still one of the chief sources of knowledge, he must keep his passion for learning and he must grow in competence in whatever subject fields he has chosen for his prime academic in-



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terests. In addition, he is a student of curriculum building so that he may select content and method wisely. He is a student of human behavior so that he may relate himself intelligently to students, parents, fellow teachers and administrators. His role is both intellectual and social. His greatest concern is the response of boys and girls to the learning environment which he prepares for and with them.

The quality of the student's response depends with few exceptions upon the teacher's attitude toward him as a person and toward his questions and his needs. In her recent study of the assessment of the quality of teaching, Marie Hughes identifies personal response as one of the seven categories of teacher functions and considers it so important as to say that its quality is the measure of good teaching.[4] This responsiveness of the teacher to the student is one of the determining factors in their relationship, whether that responsiveness is "supportive and positive in its affectivity" or "defensive and characterized by negative acts of sarcasm and threat." [5]

As I think of the concern which good teachers have for the developing and growing youngster, a concern that is neither sentimental, nor exploitive, nor possessive, but supportive and based on respect for individual personality, I am reminded once more of the young teacher who cared more about trees and poetry than about boys and girls. She is symbolic of those who go into teaching primarily because they love a subject field, because they want to preserve their daily contact with ideas that give them

[4] Marie M. Hughes and Associates. *A Research Report. Development of the Means for the Assessment of the Quality of Teaching in Elementary Schools.* Salt Lake City, Utah: University of Utah, 1959. p. 215.

[5] *Ibid.* Adapted from page 221.

joy. Soon they may discover that many children or young people do not usually share their academic interests gladly. They tend then to become disillusioned with teaching, resentful of the pupils who reject their subjects as "uninteresting" and "a waste of time," appreciative only of those boys and girls who have the background and the academic maturity to cherish the subject fields which the teachers also enjoy.

But all this changes if the neophyte learns that teaching is responsiveness to students, that it is concerned primarily with the development of persons and not just the sharing of enthusiasms. It is then that the teacher sees subject matter as a resource for children's growing. He uses from the disciplines that he has loved whatever content will most adequately serve the group concerned. He selects at the same time other materials that will nourish the mind and heart of special individuals in the class. He sees clearly the reasons for caring for differences among the students in his English class by having resources of varying quality and purpose, by including poetry of humor, adventure and nonsense as well as poetry of introspection and philosophy. He discovers through his study of the social, psychological and philosophical foundations of education and through his study of curriculum building and teaching method that teaching is more than a matter of altruism, or social service, or even helping others.

Teaching is concerned as is no other profession with growing, developing human nature in whatever form it is manifest: male or female, young or old, rich or poor, white or colored, religious or nonreligious, bright or dull, mature or immature. As Robert Bush says at the close of his study, "The fundamental domain of the individual teacher (is) the teaching-learning relationship with boys and girls." [6]

—PRUDENCE BOSTWICK, *Professor of Education, San Fernando Valley State College, Northridge, California.*

[6] Robert Bush, *op. cit.*, p. 276.

Age-Graded

(Continued from page 78)

and encourage sound attitudes. Children love to sing. At Bancroft School singing time is a gay time. Often the piano is rolled out in the corridor and the strains of "Sing Together, Merrily Sing" are played. All the children in the school come singing as they gather around the piano. Patriotic, popular, folk and partner songs are favorites. One observes and hears five-year-olds singing a melody while perhaps the ten-year-olds produce a lovely descant. Children are unaware that they are singing three-part music as they sing rounds. Sometimes the resonator bells or autoharp furnish the accompaniment. The song, "Sing Together, Merrily Sing," echoes through the building as the children go singing back to their classrooms. The following offer additional opportunities for school-wide grouping: assemblies, children's committees or student councils, library, safety, lunch room, audio-visual, playground, television programs and festivals.

Under the impact of public criticism, the school sometimes feels an urgent need to change. Nevertheless, educators must not be panicked into indefensible patterns of organization and procedure. The solid gains of the past must not be tossed aside, but should be revised, expanded and altered to fit new situations. As testing becomes more inclusive and research more applicable better plans for grouping undoubtedly will emerge.

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Curriculum Developments

Column Editor: Arthur Hoppe

A Study of Children's Language

Most educators, when they consider the nature of the language used by children, hark back to the research of the 1930's because there have been few significant studies since that time. Yet anyone who has listened to children through the years is aware that children today use extensive vocabularies, have varied interests, and many of them talk very maturely. It would be strange indeed if children were not using language in advance of children of similar age 20 or 30 years ago, because of the advent of television, radio, motion pictures, travel in the family car, and with children's books in all the supermarkets.

In contrast to this during the past 30 or more years the vocabulary of children's textbooks has been consistently simplified and controlled until there is danger that many children, through sheer boredom and lack of interest, do less well with learning to read than they are capable of doing. Information is needed regarding the relationship of the language used by children to the language of the reading textbooks and the quality of the children's reading skill.

A study is in progress at Indiana University that is designed to analyze the structure of children's language in the first through sixth grades, compare it with the language of the books which children use in learning to read, and study the influence of any apparent differences on success in learning to read. The study includes these phases:

1. Recording the spoken language of 6 through 12 year old children in its spontaneous form in free interaction with children and adults and in its structured form in sharing, planning, reporting and evaluating periods in the classroom
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   - Patterns of word usage
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3. Analyzing for the above points selected samples of reading matter in certain widely used sets of readers for grades 1 to 6
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5. Testing children's comprehension of the meaning of similar samples of material when read silently
6. Comparing the quality of reading with the quality and kind of spoken language used by children of varying age, sex, intelligence, and socioeconomic levels.

To date, recordings have been made of the speech of 750 children of grades one through six, taken in informal situations. A sample from each recording has been analyzed by a linguistic formula devised and refined by six of the country's lead-

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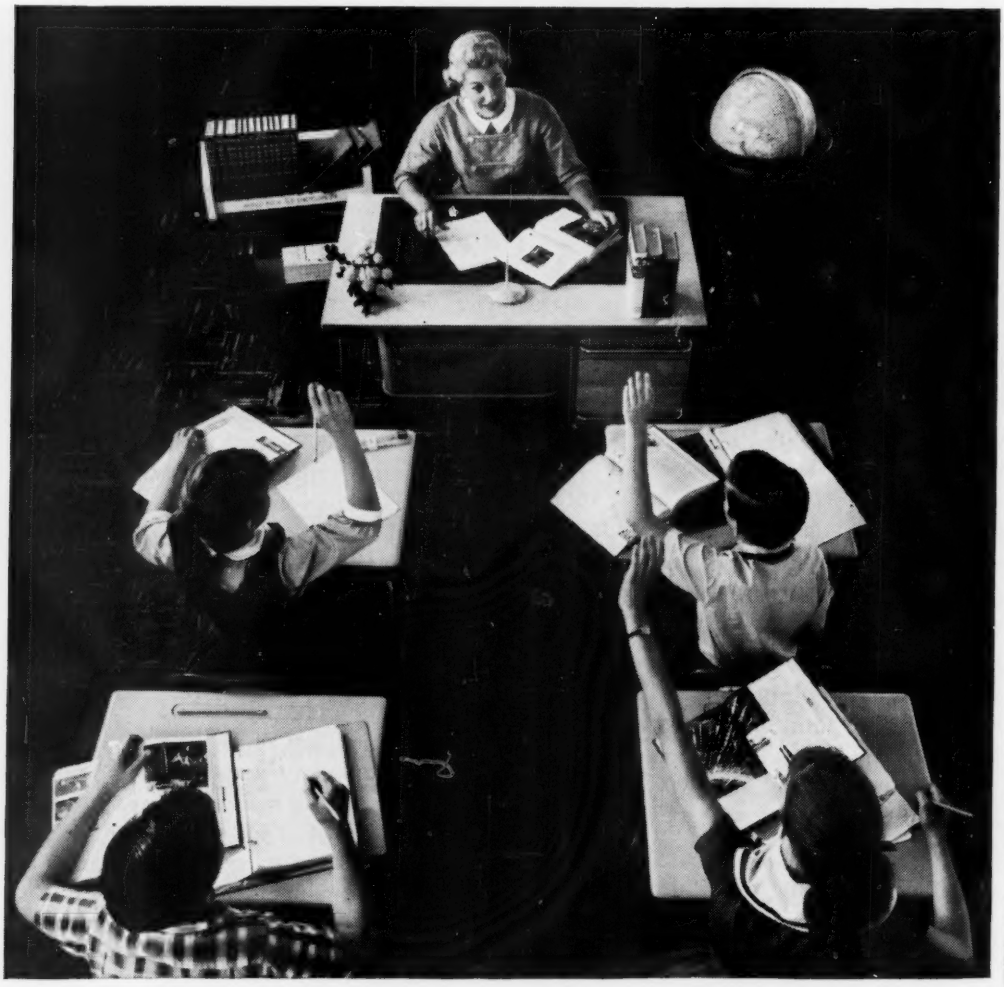

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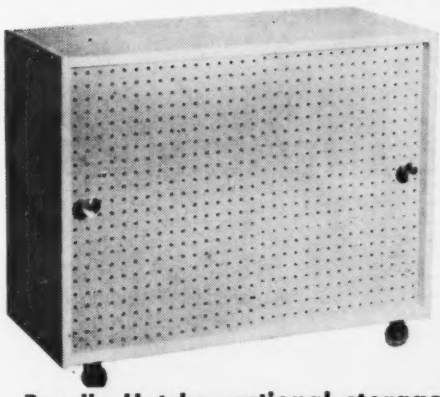
ing structural linguists. The formula is designed to indicate children's handling of the fixed slots in sentences—subject, predicate, inner complement and outer complement—and also their use of various types of movables denoting place, time, manner, cause and the like.

Though the study is only at midpoint, it appears increasingly clear that children, even at six years of age, are using all of the types of sentences used by adults. While older children use more advanced and complicated fillers for many of the sentence slots, children of all ages are skillfully using many patterns of subordination. Their speech flows smoothly and rhythmically, not cut into choppy units. The fact that few significant differences are appearing related to age, sex, socioeconomic level or level of parental education seems to indicate that within children's experience are highly effective leveling influences.

Recordings will next be made of language in more formal situations to determine the level of maturity a child may display in a setting that calls forth the best he is capable of achieving. It appears possible that the child who uses language maturely can learn to read material of similar level but that the child who rarely twists his tongue or his mind around a well-knit compound or complex sentence will read such a sentence orally with poor interpretation and silently with poor comprehension. This part of the study is still to be completed.

New Materials

St. Paul Public Schools. *Social Studies for Elementary School Children, Kindergarten—Grade Six.* Curriculum Bulletin No. 71. St. Paul, Minnesota: the Public Schools, 1959. 110 p. ($1.25)



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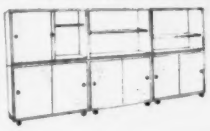

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Many classroom teachers worked with an Elementary Social Studies Curriculum Committee of 40 members over a period of four years to produce this bulletin.

This publication is an important source of information, ideas and suggestions, covering organization, teaching techniques and basic elements of content. Pertinent skills to be developed, suggested activities and likely procedures are well presented. This includes a careful outline for planning and developing units which is generally followed in the illustrative units for each of the grades. Growth characteristics of youngsters for each grade are stated, together with some implications for teaching.

While the guide contains much specific help for teachers, it is deliberately broad and flexible so that every teacher who uses it may adapt it creatively to the par-

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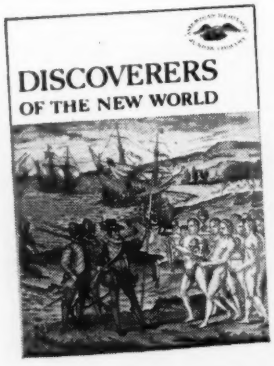

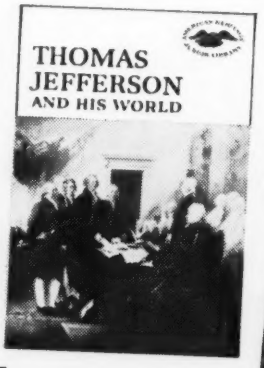

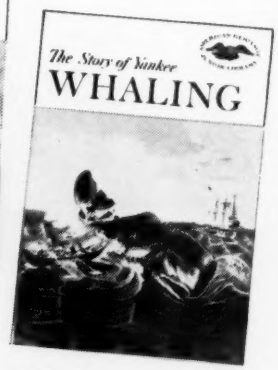

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ticular needs and interests of his own pupils, their groups, their communities.

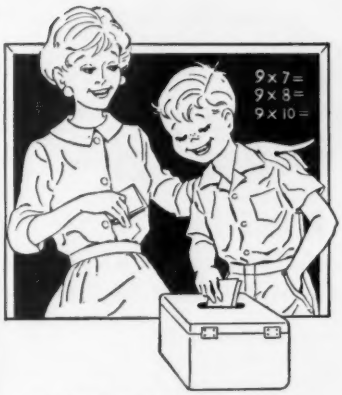
Long Beach Unified School District. *Life in Early California,* A Unit of Work for Fourth Grade Children. Long Beach, California: the School District, Office of Curriculum, Division of Instruction, 1959. 337 p. (No price indicated.)

Fourth grade teachers of Long Beach have here a unit which exemplifies very well the integrated experiences approach to the teaching of social studies. Appropriate emphasis is placed on subject knowledge; but conspicuous importance is attached to attitudes, techniques and behaviors characteristic of good citizenship in a democracy.

Life in early California was much simpler than it is today, yet it was pulsing with great vigor and drama and charm. This study by fourth graders provides, on the one hand, essential background for exploring the beginnings and expansion of our country, and, on the other hand, a basis of comparison with the complex social order of today.

This unit displays horizontal organization. The objectives for all topics of the unit are placed first. These are followed by teaching suggestions and suggested areas of experience. The section on evaluation provides for oral and written exercises, pupil and teacher concerns, and actually directs major attention toward improvements in *behavior.* The unit ends with elaborate listings of readings and resources of all kinds.

The work done in the production of this unit was of high quality. The result must be enormously rewarding to the builders and the users of the bulletin. Long Beach has a long and excellent reputation in the production of curriculum materials. This publication should enhance the system's fame still further.



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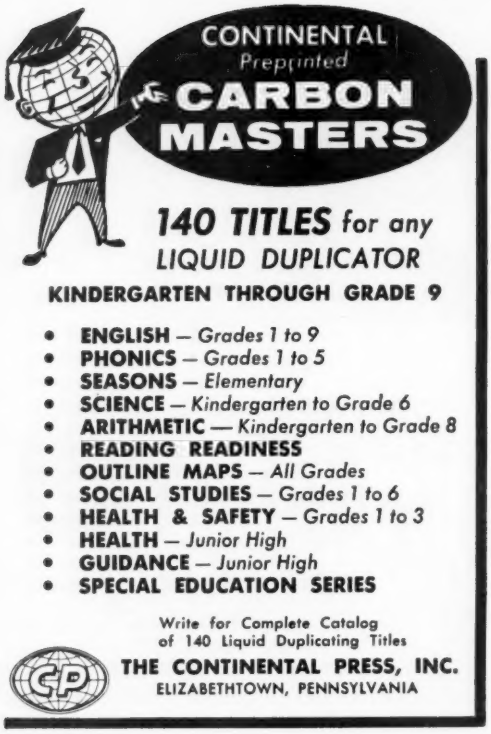
Los Angeles City Schools. *Health in the Elementary Schools,* Publication No. EC-201. Los Angeles: Division of Instructional Services, the City Schools, 1959. 360 p. (No price indicated.)

This is a factual and functional instructional guide for health from kindergarten through grade six. Some 1200 staff members were assisted by various consultants and representatives of community and public health agencies in its production. These persons were interested in helping children acquire scientific information about personal and public health, wholesome attitudes and effective habits.

The guide begins with two very useful charts: one showing the growth characteristics of elementary children; the other showing the scope and sequence of health experiences contained in the entire bulletin. Thus broad perspective is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provided for any teacher at any grade level. Part One then outlines health instruction for each grade, and Part Two presents detailed health information for teachers and many teaching suggestions. Elaborate resources are identified—books, articles, films, filmstrips, pictures and recordings. There are many suggestions for evaluation and several illustrative test forms.

The guide is a distinctly scholarly work. It is comprehensive and is skillfully organized. It shows good use of color and illustration.

Acknowledgments: In preparation of this column, the editor was assisted by three of his colleagues at Indiana University, Bloomington. The statement concerning the study of children's language was written by Ruth G. Strickland, who is directing the study. Help in appraising bulletins was rendered by Maxine M. Dunfee, in elementary social science, and Virgil E. Schooler, in health education.

—ARTHUR HOPPE, *Associate Professor of Education, Indiana University, Bloomington.*

Team Teaching

(Continued from page 88)

time. New curriculum materials suitable for large-group instruction must be found or created, rooms rearranged and refurnished, audio-visual and clerical aids purchased, etc.[1]

For these reasons, many school systems will move slowly in setting up instructional teams, in spite of all their apparent advantages. Nevertheless, it seems certain that team teaching is going to play a more and more important role in the future of American education. How can it lose, after all, when the children are behind it? Most of the children who have experienced team teaching have been enthusiastic. They seem to adjust quickly to the idea of having several teachers instead of one. They make more friends and join more activities. Most of all, they find school more interesting. With team teaching, the old-fashioned picture of the hopelessly bored child, forced to sit and squirm day after day in a certain seat in a certain room, listening to the droning voice of the same teacher, becomes a thing of the past.

[1] For some recent descriptions of team teaching plans in practice, see: Robert H. Anderson, "Three Examples of Team Teaching in Action," *The Nation's Schools*, 65: 62-67, May 1960; Robert S. Gilchrist, "Promising Practices in Education, II," *Phi Delta Kappan*, March 1960, p. 269-74; and Liz Wilson, "150 Mittens," *Mark* (Mark Publications, 64 Wall St., Norwalk, Conn.), April 23, 1960, p. 5-8.

Significant Books

Column Editor:
Elizabeth Z. Howard

Contributors:
D. Bob Gowin
Bruce R. Joyce
John Sternig
Robert L. McCaul
Mildred Thurston

Basic Philosophies of Education. ***Christian O. Weber.*** *New York: Rinehart and Company, Inc., 1960.*

Mr. Weber presents basic philosophies of education in terms of the main traits of special schools of philosophy. Each school of philosophy is then treated by a combination of philosophic issues and personal convictions of individual philosophers.

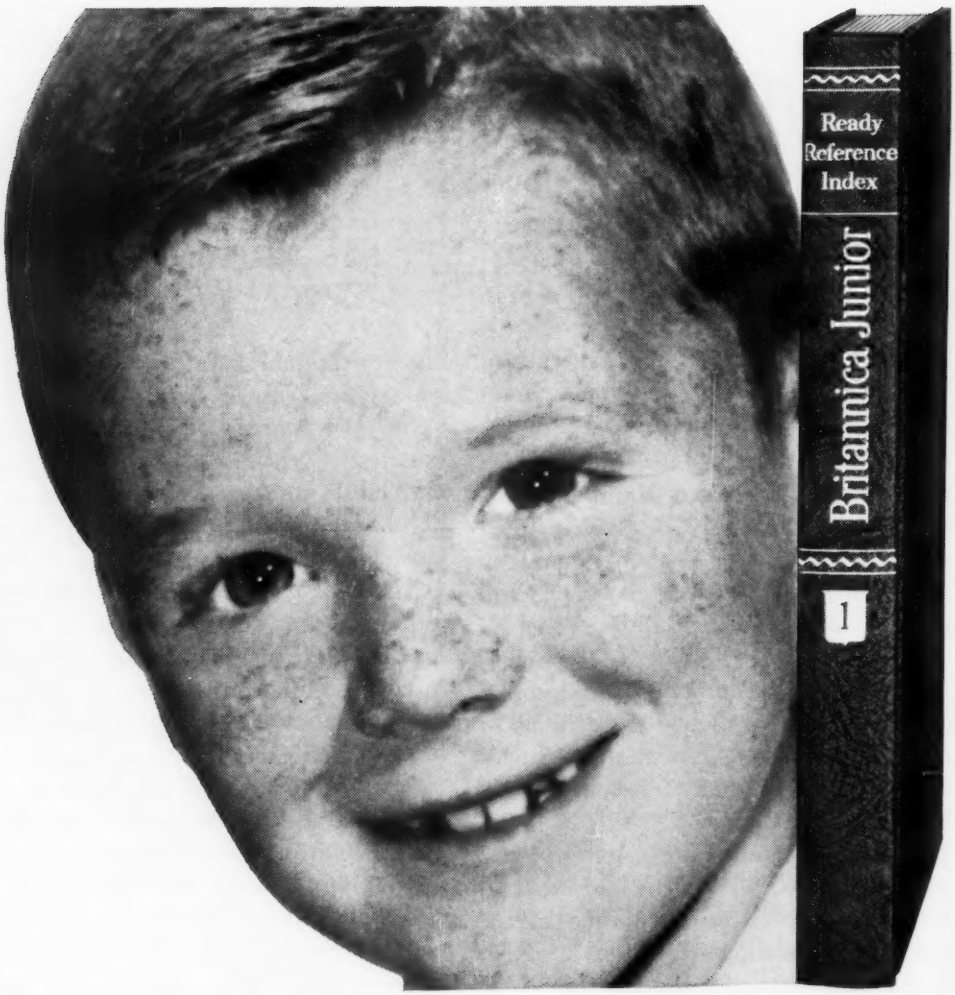
It has been customary in philosophy of education to present it as schools of philosophy labeled Essentialists, Idealists, Realists, Pragmatists. A shortcoming of this treatment seems to be that as soon as the commonalities are asserted defining the school, the individual philosophers supposedly representative of the school may be shown to differ on many issues. Mr. Weber recognizes this shortcoming and his focus upon individual thinkers helps to overcome the defect.

This new book presents little that is new to philosophy of education. Mr. Weber is aware of the tendency in current philosophy to explore more fully the nature of *inquiry* and to turn away from the nature of *being*. Using this as a criterion of currency, *Basic Philosophies of Education* is not current. The "schools" approach to the philosophy of education seems to present philosophy as a systematic body of knowledge (being) rather than as a collection of concepts useful in criticizing and clarifying educational issues (inquiry). Thus we see in Weber's book less emphasis upon the process of philosophizing (analysis, synthesis, and speculation) and more emphasis upon the products of philosophizing (the rhetoric of conclusions).

The book is written in a readable style, although one minor annoyance is the excessive use of exclamation marks. The intended audience is college juniors and seniors who are being taught by a teacher well grounded in philosophy.

Another feature of the book is Mr. Weber's frequent and pointed comments about relevant psychological research; indeed, Mr. Weber sees psychology as a bridge between philosophy and educational practice. Readers may be delighted with the reminder that John Locke formulated the principle of the conditioned reflex two hundred years before Pavlov, but Dewey followers can scarcely be happy with Weber's lack of concern with the philosophic significance of the nature of the problem in Dewey's writings. In sum, this is a contribution to the rapidly increasing number of textbooks for teachers of philosophy of education to choose from, but not otherwise a new contribution to philosophy of education.

—*Reviewed by* D. Bob Gowin, *Assistant Professor of Education, University of Chicago, Illinois.*



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Curriculum Development in the Elementary School. *W. Ray Rucker.* *New York: Harper and Brothers, 1960. 405 p.*

The preface indicates that this volume was written for use in undergraduate and graduate instruction in elementary school curriculum. In the opinion of this reviewer, a book intended for this purpose should meet the following criteria:

1. It should be thoroughly conceptualized and documented, introducing the student to an orderly theory of curriculum and indicating where this theory is grounded in evidence and where evidence is lacking.

2. It should illustrate its concepts with careful research and the experience of the author.

3. It should expose the student to the current edge of experimentation in education, at least indicating to him the areas in which advanced thinking is taking place.

Mr. Rucker's volume meets the second criterion best. Part II, "The Elementary School in Action," is the product of a sound and wise student of education. His careful and imaginative selection of illustrative learning experiences provides a unique introduction to democratic classrooms in action. The beginning student in education can be shown, through this section, an excellent panorama of teaching procedures, materials, content samples, and cooperative planning and control procedures. The descriptions ring true and are illustrated profusely with children's writings, logs of projects, and the like.

These illustrations of elementary schools in action are "what is new and well done" about this book and represent its main contribution. The remainder of the volume is similar to many other general works about the elementary school and is beset by the problems which afflict nearly every attempt to "cover" this mammoth topic.

In terms of criterion "1" above, Mr. Rucker has attempted to conceptualize the elementary school in terms of American societal patterns, learning theory, and child development. He makes some telling points, particularly in reference to American core values. However, the whole effort does not hold together, partly because he flays Victorian educational methods at the expense of a positive and organized presentation. Frequent resort to caricature also weakens many of his best points.

The greatest conceptual weakness, however, is that the discussions of society, child development, and learning theory are not woven together in a clear theory of curriculum. Even where the book is strongest (in classroom examples) it does not show adequate relation between curriculum theory and the school in action. Crucial topics such as the selection of learning experiences, so important to curriculum theory and the beginning teacher, receive much sporadic attention through the book, but not in a solidly conceptual treatment.

Documentation is on the whole selective and clear. The chief weaknesses are those common in modern educational and psychological writings (e.g., the tendency to equate authoritarianism with fear, a generality qualified by the enormous Muslim population of the world, to cite one example).

In relation to criterion "3," *Curriculum Development in the Elementary School* presents the familiar democratic, cooperative scheme for improving curriculum, exemplifies it well with the Delta County Curriculum Project, but fails: (a) To acquaint the reader with many of the

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1960 596 pages, 40 illustrations

The American Secondary School

By **L. O. Taylor,** formerly of *Municipal University of Omaha;*
Don R. McMahill, *Omaha Technical High School;* and
Bob L. Taylor, *San Francisco State College*

An interpretative study of the status of the secondary school in modern American society, this new text first traces the origins of public education in the United States and then discusses the development of the secondary school curriculum. The book also treats problems of adjusting to slow and rapid learners, improving reading, and understanding the major issues of secondary school administration.
1960 492 pages

Education for Effective Thinking

William H. Burton, formerly of *Harvard University;*
Roland B. Kimball, *New Hampshire Department of Education;* and
Richard L. Wing, formerly of *Long Beach Community College*

This new text presents a straightforward account of the thinking process as it is related to the goals of education. After examining the thinking process itself—its psychology, materials of thought, etc.—the book analyzes subject matter areas taught in today's schools and emphasizes the aspects of these subjects which provide learning experiences that will improve general thinking skills. *1960 508 pages*

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other current or recent experiments in elementary schools (notably the nongraded movement, which is not mentioned as such, even in passing); and (b) To discuss the more sophisticated problems of modern educational theory, such as the development of critical thinking and current problems in the selection of subject matter and themes in science, social studies, and mathematics. Although topics such as these could not have received detailed treatment in a volume like this, the beginning student in education needs to be oriented to them early if he is to participate fully as a better teaching profession is built.

—Reviewed by BRUCE R. JOYCE, *Assistant Professor of Education, University of Delaware, Newark.*

Science and Mathematics, Count-down for Elementary Schools. *Oklahoma City, Oklahoma: Frontiers of Science Foundation of Oklahoma, Inc., 1960. 71 p.*

What are we afraid of? We read of a new heavy-weight Sputnik and fear runs through us as we compare it with our smaller satellites. Why do we fear? Is there a pound value for the difference between Soviet and U.S.A. science? Or do we vaguely realize that hydrogen bombs are more easily carried by large missiles than by small satellites? The fear we feel is that of harm from a land across the sea. It is the same fear that men have always felt in the face of force.

Can this fear be eased by more science and mathematics in the schools? Or does its easing also call for more and better humanities which strive to make man more humane?

If this seems a strange way to begin a review it is only because the pamphlet so specifically deals with science and mathematics. Yet the men whose thoughts are recorded in the pages of this symposium, which was held in December 1959 in Oklahoma City, all show clearly that the matter goes more deeply than conventional ideas about science or mathematics. For the educator who feels that a new 1960 set of science or math books will take care of things, this booklet will be a shock. The definitions of science and math as given by Roller, Rosenbloom, Watson, Henry and Fisher bear small resemblance to the average teacher's definitions. These men are talking about a state of mind, a set of values, a search for truth, a way of living; not a mere set of facts or a house full of gadgets. They say we have many Edisons but few Einsteins. We have lots of technology but little science. We can describe many events but have slight understanding of phenomena.

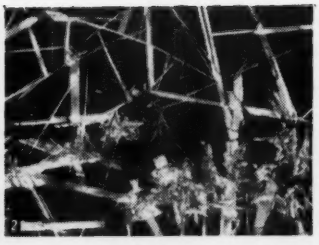
These men plead for science and math as basic forces shaping views, minds and hearts, not as mere exercises or laboratory collections. The book goes to the heart of what should motivate us in seeking to join science to the 3 R's.

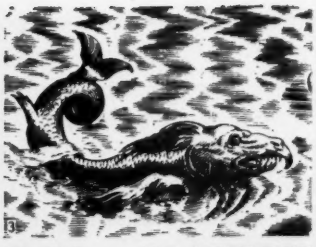
This booklet deserves the attention of all school persons interested in improving the quality of American education without merely adding more to an already overcrowded curriculum.

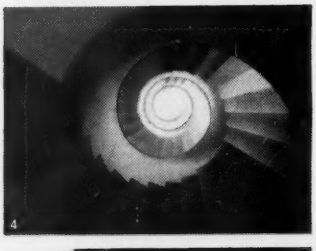
—Reviewed by JOHN STERNIG, *Assistant Superintendent, Glencoe Public Schools, Glencoe, Illinois.*

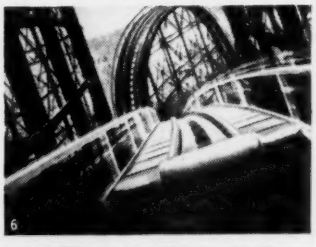
The Role of the School in American Society. *V. T. Thayer.* *New York: Dodd, Mead and Co., 1960. p. 530.*

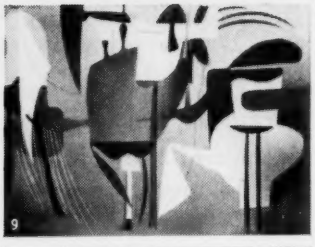
The purpose of Mr. Thayer's book is "to survey the task of public education in the light of changes that have taken place in American culture from the colonial period to the present and to consider the impact of these changes upon the school . . ." (p. ix)

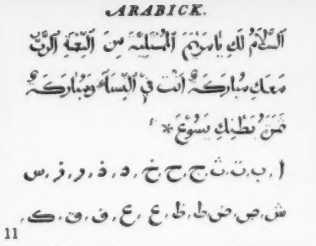


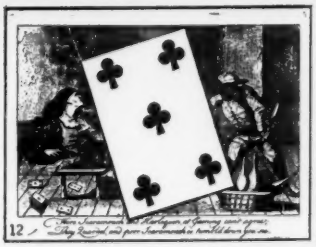












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To achieve this purpose, the author adopts an approach that is divided into four parts. He begins by setting forth certain basic assumptions and ideas from the past (acceptance of change, equality of educational opportunity, etc.) that he believes still guide our educational thinking and practice. In Part II he analyzes fundamental transformations (economic, familial, etc.) in the status of youth and the implications these have for education. In Part III he traces varying views of the nature of the child and of learning and he sketches the influence of these views upon curriculum, method and administration through the past three centuries. In the final section, he discusses the most critical of the educational issues (federal aid, public money for parochial schools, etc.) that are being debated today. Part IV is the most extensive of the sections, comprising about 40 percent of the book.

As this brief description suggests, Mr. Thayer has posed a formidable organizational problem for himself. In all candor it must be said that he has not solved this problem very successfully, for the four parts of the book tend to be independent units and there is not even a final summarizing chapter that attempts to draw the parts together. Nowhere, in fact, is there a full-scale, systematic presentation of what the author conceives the "role" or "task" of American public education to be. The weakness in organization and the miscellaneous nature of the contents make it difficult to determine where the book would most appropriately fit into the education program.

However, I do not wish to dwell on formal shortcomings. Mr. Thayer is interesting and stimulating and has many sage and valid things to say on the multifarious topics and issues he treats. He is an outstanding educational liberal. In my opinion, his heart is in the right place and he is nearly always on the side of the angels. Perhaps this provides a clue to the kind of contribution his book can uniquely make. It can, I think, communicate to our young prospective teachers some of the idealism and optimism that inspired the educational fellowship of the 1920's and 1930's and can give them a strong faith in the mission of American public education and in the worth of the profession for which they are preparing.

—*Reviewed by* ROBERT L. MCCAUL, *Associate Professor of Education, University of Chicago, Chicago, Illinois.*

Adventures with Children in Nursery School and Kindergarten. ***Elsa Barnouw and Arthur Swan.*** *New York: Thomas Y. Crowell Company, 1959.*

In this book the authors make the reader extremely aware of children and of the ways in which they react to the variety of experiences they are having. The authors discuss both the purpose and importance of nursery schools and kindergartens. They carefully and thoroughly touch the many areas provided for in the teaching of young children. Attention is also given to descriptions of incidents and problems in connection with children, parents and teachers and how these were handled.

Through the vivid accounts of children's behavior in encountering different personalities, being presented with new materials, having to share with others, and being separated from parents, the authors point out the importance of an understanding teacher. Good teachers create an atmosphere that conveys to the child that he is expected, provided for, wanted and loved. Unlimited opportunities are given to the children to experiment, to explore, to ask

questions and to have their questions answered. Emphasis is placed upon the fact that children are different and that adults working with them need to be sensitive to their individual needs.

Generally, it seems that nursery school experiences prove to be a very good supplement to the home. However, it is pointed out that all children are not sent to a nursery school for the same reason. Some go because of lack of play space; some who are an only child go for companionship; others go for the opportunity to have a variety of materials and equipment; some because the mother is away from home; and others because there is an urgent need for the child to be under the direction of a trained, sensitive and understanding adult.

Attention is given to the difference in the needs of nursery school and kindergarten children. Time, growth and experiences have caused the five year old to be more aware of his peers, more of a conformist and readier for more complex situations than the four year old.

Parents are given major attention. Nursery school is a new experience for them, too. The spontaneous and unexpected behavior of the children creates real tension. The parents are anxious and afraid that their children will not be acceptable even though they are doing what any child of that age does under like circumstances. As the parents observed their children with the teachers they were gratified to see that the teachers were kind and consistent, that they respected the individual rights and differences of each child and, most important of all, demonstrated a genuine love for the children. Under these conditions the parents were willing to relax and to leave their children at school.

Because of a very realistic approach to child development and behavior, to suitable materials and activities for children, to involvement of personalities of children, teachers and parents, this book can be used very extensively. Teachers, parents and students can profit greatly from reading it.

—*Reviewed by* MILDRED THURSTON, *Principal: Nursery School, Kindergarten, and Primary Education, University of Chicago Laboratory Schools, Chicago, Illinois.*

Director of Instruction

(Continued from page 108)

of instruction. In addition, utilizing such statements, each school system should regularly provide for group definition of roles and group discussion regarding the ways in which directors of instruction, principals and supervisors, as well as others, may be most helpful.

New teachers, particularly, should be informed and encouraged to discuss their role perceptions regarding these positions as a part of their orientation in the fall before school opens the year they are employed. Teachers handbooks for the school system should contain, in written form, regularly revised statements regarding the local perceptions concerning each of these roles. These perceptions should regularly be reviewed in the light of our larger setting, the values of a democratic society.

The clarification of role perceptions is important to morale and productivity in any group. Curriculum workers, particularly directors of instruction, can increase their effectiveness through improved definition of their responsibilities, role perceptions, and role relationships.

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